Online ISSN : 2249-4618
Print ISSN : 0975-5888
DOI : 10.17406/GJMRA

Global Journal of Medical Research: K

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Global Journal of Medical Research: K
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Volume 16 Issue 3 (Ver. 1.0)

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Contents of the Issue

Global Journal of Medical Research: K
Interdisciplinary
Volume 16 Issue 3 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Smokeless Tobacco use among Male and Female in Northeast State, India

By Kh Jitenkumar Singh & Neeru Singh
National Institute of Medical Statistics, India

Abstract- Smokeless tobacco has been found as harmful as smoke tobacco. Smokeless tobacco associated with the various oral diseases including mouth cancer and adverse reproductive outcome. Objective of this study is to examine the prevalence of smokeless tobacco consumption in Northeast state, India and to study the socioeconomic, demographic correlates of tobacco use in the form of smokeless tobacco only. We used the cross sectional survey DLHS-4 (2012-2013) data of northeast state, India. All men and women living in the study area, aged 15 years and above were included. Information on socio demographic characteristics and smokeless tobacco consumption was administered. Smokeless tobacco consumption was categorized as 'Current consumers' and "non consumers". Associations between smokeless tobacco consumption and the explanatory variables were examine using bivariate and multivariate statistical technique. 67,930 individual men and 75,799 individual women were the unit of analysis in the study. The prevalence of 'Current consumption' among men 65% and women 51% respectively. Current consumption was associated with level of education, religion, caste, occupation, residence, marital status, and age.

Keywords: cross sectional study, men, women, smokeless tobacco and Northeast state.

GJMR-K Classification: NLMC Code: W 20.5

Strictly as per the compliance and regulations of:

Smokeless Tobacco use among Male and Female in Northeast State, India

Kh Jitenkumar Singh [α] & Neeru Singh [σ]

Abstract- Smokeless tobacco has been found as harmful as smoke tobacco. Smokeless tobacco associated with the various oral diseases including mouth cancer and adverse reproductive outcome. Objective of this study is to examine the prevalence of smokeless tobacco consumption in Northeast state, India and to study the socioeconomic, demographic correlates of tobacco use in the form of smokeless tobacco only. We used the cross sectional survey DLHS-4 (2012-2013) data of northeast state, India. All men and women living in the study area, aged 15 years and above were included. Information on socio demographic characteristics and smokeless tobacco consumption was administered. Smokeless tobacco consumption was categorized as 'Current consumers' and "non consumers". Associations between smokeless tobacco consumption and the explanatory variables were examine using bivariate and multivariate statistical technique. 67,930 individual men and 75,799 individual women were the unit of analysis in the study. The prevalence of 'Current consumption' among men 65% and women 51% respectively. Current consumption was associated with level of education, religion, caste, occupation, residence, marital status, and age.

The present study found that the prevalence of smokeless tobacco consumption is high among urban area in northeast states, there is a considerable amount of variation among the consumption of tobacco by educational level, age, locality, religion etc. Smokeless tobacco consumption among men and women is associated with education, religion, caste, age, residence, occupation, marital status. Therefore, this study recommended that the effective government and non government strategies and plans should be starting to "control Smokeless tobacco consumption" and nukar natak should be played addressing "How smokeless tobacco affects the health of a person" in all Northeast states, India.

Keywords: cross sectional study, men, women, smokeless tobacco and Northeast state.

I. Introduction and Review of Literatures

Consumption of tobacco kills approx six million people each year moreover, it is the measure threat of disease and death [1, 2]. Tobacco is the most important oral cavity and pharyngeal cancer risk factors. Approximately 90% of people with mouth cancer are tobacco users. Some 7.5% of the world's (53.9 million) deaths were attributable to tobacco use in 1998 and if same smoking patterns continue, that number will rise to 10 million deaths annually by 2030 [3]. Tobacco can be consumed both in smoke and smokeless form.

Smokeless tobacco is tobacco that is not burned; it is also known as chewing tobacco, oral tobacco, spit or spitting tobacco, dip, chew, and snuff. Harmful health effects of smokeless tobacco include: mouth, tongue, cheek, gum, and throat cancer. Smokeless tobacco also causes nicotine addiction. South Asian people consume smokeless tobacco the most. More than one third of total tobacco consumption in this region is in the form of smokeless tobacco [4-6]. Smokeless tobacco consumption in south Asia is a major public health threat, in India (prevalence: 18.4%), Bangladesh (32.6%), Sri Lanka (6.9%) and Nepal (6%) by the estimation of WHO [7].

India is the second most populous country and one of the world's largest producers and consumers of tobacco. Here, tobacco is available in a variety of different types and brands e.g. bidi, gutkka, khaini, pan masala, hookah, cigarettes etc [3] and also the form of consumption varies from place to place like smoke cheroot in Odisha and Andhra Pradesh, dry snuff in western part, while creamy snuff in northeast part of India. Mostly the tobacco is consumed in smokeless form in northeast states. The prevalence of tobacco consumption in India, either smoked or smokeless tobacco, in the population aged 15 year and above was 47 per cent among men and 14 per cent among women while overall prevalence was 37 percent [8,9]. Consumption of smokeless tobacco products in India is increasing rapidly [10, 11], which is showing a negative effects for both male and female. As smokeless tobacco is quite famous among women, affecting their oral morbidity and perinatal health, including premature delivery, low birth weight and shortened length [12-17]

In northeast states of the India, smokeless tobacco is a part of the socio cultural [18]. They have different customs, food habits, life-style, diverse ethnic groups, type and pattern of tobacco consumption as compared to the rest of the country. Research have shown that in northeast states, betel quid (55.4%), is the most popular smokeless tobacco followed by tuibur (13.1%), gul (12.0%) and khaini (9.1%), Gul and tubur are primarily used by women and recent study shows that the prevalence of smokeless tobacco in northern, eastern and northeast states is 8.4%, 31.8% and 23.8% [18-20]. Betel quid is a combination of betel leaf, areca nut, and slaked lime. Like other smokeless tobacco

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products, betel quid and gutka are known to cause Esophageal cancer, Lip cancer, Mouth cancer, Pharynx cancer, Tongue cancer. The most harmful cancer-causing substances in smokeless tobacco are tobacco-specific nitrosamines (TSNAs). TSNA levels vary by product, but the higher the level the greater the cancer risk.

Table 1 : Prevalence of smokeless tobacco use in northeast States India by sex

	AR	MN	MG	TR	NG	SK	MZ
Smokeless tobacco, GATS(2009-2010)							
Male	44.9	52.1	20.7	39.4	53.1	27.6	32.6
Female	27.7	37.0	35.9	43.5	36.6	23.3	49.1
Smokeless tobacco, DLHS-4 (2012-2013)							
Male	56.8	65.6	86.7	66.6	64.2	39.3	79.3
Female	33.7	51.4	87.2	65.8	34.5	23.6	77.4

Source: GATS 2009-2010 and DLHS 2012-2013

AR : Arunachal Pradesh, MN: Manipur, MG: Meghalaya, TR: Tripura, NG: Nagaland, SK: Sikkim, MZ: Mizoram

Table 1 shows the prevalence of smokeless tobacco, Meghalaya, Tripura and Mizoram was higher in women while in Arunachal Pradesh, Manipur, Nagaland and Sikkim males are consuming more smokeless tobacco in GATS (2009-2010), while in DLHS (2012-2013) Meghalaya, Manipur and Tripura have the highest prevalence of smokeless tobacco among both male and female in DLHS (2012-2013). Hence, the objective of this study is to examine the prevalence of smokeless tobacco consumption among male and female in northeast state, India and to study the socioeconomic and demographic characteristics correlates with tobacco use in the form of smokeless tobacco only.

II. Data and the Methods

Data for this study was taken from the fourth round of the District Level Household Survey (DLHS-4) conducted during 2012-13. DLHS-4 adopted a multi-stage stratified systematic sampling design. Detailed information about sampling employed in this survey can be obtained from the DLHS-4 report. All seven states, namely, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim separate CAB (Clinical Anthropometric and Biochemical) data files (excluding Assam) were merged together for this study. The outcome variable included in the analysis is "personal habit of age 15 and above using smokeless tobacco". Where the response was further divided into two categories like "Current Consumption" and "No Consumption" the household members was considered current consumers if they had responded that they were consuming (smokeless tobacco) and they coded as 1, while the never consumers, ex-consumers and don't know (0.3%) are coded as 0. To measure level of prevalence and association of smokeless tobacco with factors, this study used both bivariate and multivariate analyses. Chi-square test is used to check the association of the current users with selected characteristics like age, literacy, occupation etc characteristics (result not shown). For computation of age-adjusted prevalence rate, we use 2011 census data, RGI, Govt. of India as the standard population structure. We computed the standard age proportion by dividing the age-specific census population by the total census population number and standardizing proportion sum to 1. Then, age-adjusted factors for 6 (six) age grouping (10 year intervals each) were used for computation of age-adjusted prevalence. Binary logistic regression was applied to measure the association and to check the net effect of factors on the current consumers for males and females. Variance inflation factor (VIF) of all the variables were computed to check collinearity prior to inclusion in multivariate logistic regression problem of collinearity among independent variables not found (highest VIF, 2.36). The results of logistic regression, are presented in the form of estimated odds-ratios with 95% CI. The whole analysis was performed using STATA version 13.0 with survey commands and R software.

Ethical statement: This study is based on data available in public domain, therefore no ethical issue is involved.

III. Results and Discussion

Table 2 presents the unweighted count of sampled respondents and population estimates classified by selected socio demographic and occupational background. The estimated population of person age 15 year and above in northeast state in DLHS (2012-2013) was 143,729 where 67,930 were male and 75,799 were female respondent were taken as unit of analysis.

a) Differentials in current smokeless tobacco consumption

Table 3 represents the age adjusted prevalence of male and female among those who were consuming smokeless tobacco. In males, illiterate peoples having the highest age adjusted prevalence while in female below middle 52.7% is the highest. Christian males

(70.1%) having the highest adjusted prevalence than female (55.8%). We have also found that the wide variation in adjusted and unadjusted age prevalence especially non working male and unmarried male, female. Among states, Meghalaya have the highest prevalence followed by Mizoram.

b) Factors associated with smokeless tobacco consumption

Table 4 presents odds ratio among male and female after performing logistic regression models which examine the effect of individuals household and community characteristics on current smokeless tobacco consumption in northeast states, India. The results show that age group, social group, sex and education are significantly associated with current smokeless tobacco consumptions in both sexes. In table 4 the male in age group (20-34 and 35-59) are 3 times more consuming smokeless tobacco than the males in age group (15-19). Non ST, non Christian and the males who are unmarried are consuming less smokeless tobacco than ST, Christian and married males.

Table 2 : Percent distribution for males and females according to the selected background characteristics northeast states, India, DLHS-4(2012-2013).

Background characteristics	Male (n=67,930)		Female (n=75,799)		Total (N=143,729)
	Percent	Sample size	Percent	Sample size	
Age					
15-19	47.6	7,512	52.4	8,263	15,775
20-34	42.9	21,552	57.1	28,628	50,180
35-59	48.1	28,578	51.9	30,860	59,438
60+	56.1	10,288	43.9	8,048	18,336
Level of education					
Illiterate	35.0	11,196	65.0	20,753	31,949
Below Middle	46.8	16,066	53.2	18,229	34,295
Middle	50.2	16,636	49.8	16,473	33,109
Secondary	54.2	24,049	45.8	20,359	44,408
Religion					
Christian	47.1	39667	52.9	44520	84,187
Non Christian	47.5	28280	52.5	31294	59,574
Caste					
Scheduled tribe	47.2	51243	52.8	57390	108,633
Nonscheduled tribe	47.6	16704	52.4	18424	35,128
Occupation					
Working	69.5	41,633	30.5	18,302	59,935
Not working	31.4	26,314	68.6	57,512	83,826
Marital status					
Unmarried	51.4	18,634	48.6	17,653	36,287
Married	45.9	49,311	54.1	58,159	107,470
Place of residence					
Urban	46.4	16,832	53.6	19,442	36,274
Rural	47.6	51,115	52.4	56,372	107,487
States					
Arunachal Pradesh	47.8	17643	52.2	19272	36,915
Manipur	46.1	10678	53.9	12473	23,151
Meghalaya	39.2	5429	60.8	8407	13,836
Mizoram	48.8	11720	51.2	12309	24,029
Nagaland	50.0	14456	50.0	14460	28,916
Tripura	48.3	3260	51.7	3486	6,746
Sikkim	46.8	4761	53.2	5407	10,168
Total	47.2	67,930	52.8	75,799	143,729

Source: Based on authors' computation.

Table 3 : Prevalence of smokeless tobacco use among male and female according to background characteristics, northeast states, India, DLHS-4 (2012-13).

Background characteristics	Male (n=67,930)		Female (n=75,799)	
	Crude	Age adjusted	*Crude*	Age adjusted
Level of education				
Illiterate	65.2 (0.4)	66.7 (1.0)	47.2 (0.7)	46.9 (0.8)
Below Middle	68.1 (0.7)	66.9 (0.7)	54.5 (0.7)	52.7 (0.7)
Middle	65.4 (0.7)	64.6 (0.7)	52.6 (0.7)	51.9 (0.7)
Secondary	63.8 (0.7)	62.6 (0.4)	49.7 (0.7)	50.4 (0.8)
Religion				
Hindu	61.7 (0.7)	59.2 (0.6)	48.6 (0.9)	46.9 (0.9)
Christian	69.8 (0.6)	70.1 (0.6)	56.0 (0.7)	55.8 (0.7)
Others	56.3 (0.7)	54.7 (0.7)	37.0 (0.8)	36.2 (0.9)
Caste				
Scheduled tribe	66.9 (0.5)	66.4 (0.5)	51.9 (0.6)	51.3 (0.6)
Scheduled caste	62.8 (1.6)	60.3 (1.4)	48.7 (1.9)	47.2 (1.2)
OBC	55.1 (1.2)	53.5 (1.2)	42.4 (1.1)	41.3 (1.1)
Others	63.1 (0.9)	60.7 (0.9)	49.7 (1.1)	47.5 (1.1)
Occupation				
Working status	71.7 (0.4)	71.3 (0.5)	57.5 (0.7)	56.2 (0.7)
Not working	55.7 (0.5)	61.2 (0.5)	48.7 (0.6)	48.6 (0.6)
Marital_status				
Unmarried	54.5 (0.6)	61.4 (0.9)	43.0 (0.7)	51.4 (0.7)
Married	69.6 (0.4)	70.7 (0.5)	53.3 (0.6)	52.8 (0.6)
Place of residence				
Urban	65.7 (0.7)	65.0 (0.7)	53.9 (1.3)	52.9 (1.2)
Rural	65.3 (0.5)	64.1 (0.5)	49.3 (0.5)	48.5 (0.5)
States				
Arunachal Pradesh	57.0 (0.7)	55.4 (0.6)	33.8 (0.8)	33.4 (0.7)
Manipur	65.4 (1.2)	64.1 (1.2)	51.9 (1.2)	50.5 (1.1)
Meghalaya	86.8 (1.2)	86.9 (1.2)	87.2 (1.1)	86.3 (1.1)
Mizoram	79.4 (0.6)	78.7 (0.6)	77.4 (0.6)	76.5 (0.6)
Nagaland	64.3 (1.1)	65.9 (1.2)	34.5 (0.9)	36.1 (0.9)
Tripura	66.6 (1.8)	64.4 (1.3)	65.8 (2.0)	65.1 (1.5)
Sikkim	39.4 (1.3)	37.4 (1.4)	23.6 (1.5)	22.5 (1.4)
Total	65.4(0.4)	64.6 (0.6)	51.0 (0.5)	50.8 (0.5)

Source: Based on authors' computation.

Note: Figure given in the parenthesis is standard error

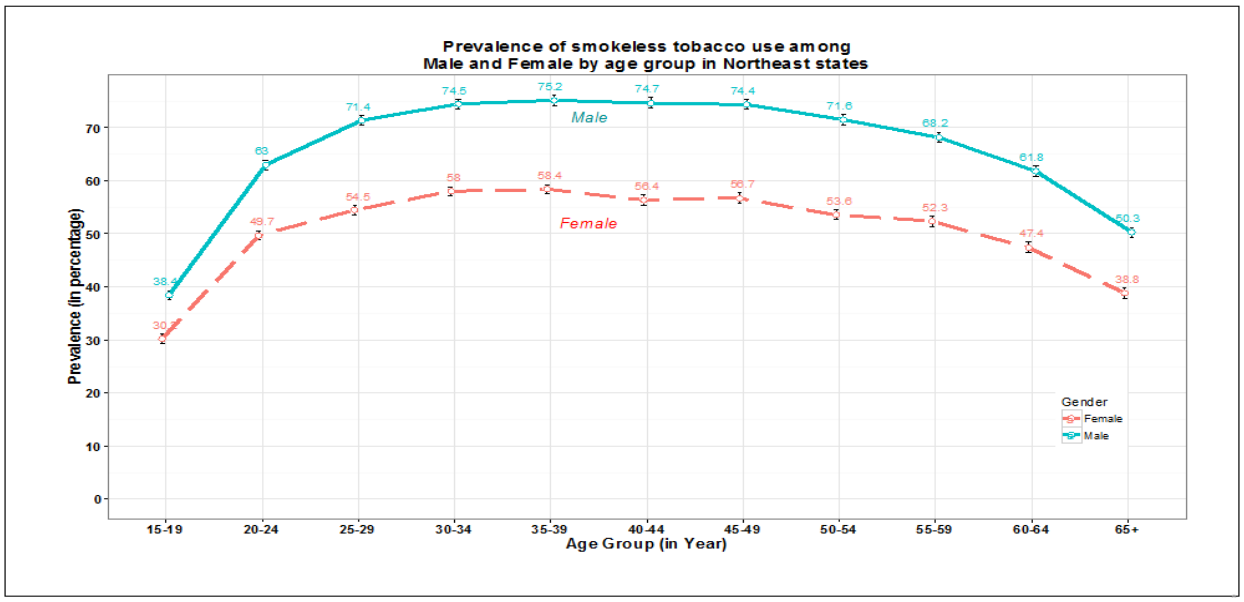

Figure 1.1 : Age wise prevalence of smokeless tobacco use by gender

Table 4 : Adjusted odds ratios of selected individual, household and community characteristics of person among Male and Female in DLHS-4 (2012-13) Northeast states, India.

Background characteristics	Male (n=67,930)		Female (n=75,799)	
	Odds Ratio	p value	Odds Ratio	p value
Age				
15-19#	1		1	
20-34	3.18	0.00	2.56	0.00
35-59	3.05	0.00	2.64	0.00
60+	1.19	0.00	1.50	0.00
Level of education				
Illiterate	1.24	0.00	0.97	0.56
Below Middle	1.28	0.00	1.14	0.00
Middle	1.16	0.00	1.15	0.00
Secondary#	1		1	
Religion				
Non Christian#	1		1	
Christian	1.78	0.00	1.87	0.00
Caste				
Non Scheduled tribe#	1		1	
Scheduled tribe	0.92	0.08	0.81	0.00
Occupation				
Working#	1		1	
Not working	2.45	0.00	2.3	0.00
Marital_status				
Unmarried#	1		1	
Married	1.50	0.00	1.17	0.00
Place of_residence				
Rural#	1		1	
Urban	1.07	0.103	1.20	0.00

Source: Based on authors' computation. # : reference category

Figure 1.1 shows age wise prevalence of smokeless tobacco consumption among male and female in northeast states, India. From the above figure, the male are consuming more amounts of smokeless tobacco then the female while the Consumption of smokeless tobacco increases with the age till 40-44 after which it starts decline in both the gender.

The prevalence of smokeless tobacco consumption among male and female in our study is 69.6% and 50.8%. Present study reveals that education is significantly associated with smokeless tobacco consumption. This is consistent with observations that those with lower level of education are more likely to consume smokeless tobacco [23, 24]. In this study, the age wise prevalence of smokeless tobacco consumption is higher as the age advanced and the highest rate is found in the age group of 20-34 and 35-59 years and then declined after 60 years in both the sexes, similar finding was also reported [23, 25]. Those who are married have a higher rate of smokeless tobacco consumption as compared to the unmarried respondents. This may be due to influences of the spouses consuming smokeless tobacco. Similar association between smokeless tobacco consumption and marital status was also reported [25].

IV. Conclusion

In northeast states, India smokeless tobacco consumption is strongly associated with the level of education, religion, caste, marital status, occupation and place of residence. A comprehensive ban on tobacco advertising, promotion and sponsorship needs to be implemented according to the standard outlined in 'Article 13' in the WHO Framework Convention on Tobacco Control. Display and visibility of smokeless tobacco products at points of sale constitutes advertising and promotion and should therefore be banned [22]. In addition to proper enforcement of the new law, there is a need for a nationwide campaign educating people in both rural and urban areas about the law and health risks of smokeless tobacco.

V. Acknowledgments

The authors gratefully acknowledge members of the study field team including who were involved in mapping/listing and main survey team during data collection in northeast states. The authors also acknowledge all the respondent for their active participation in this study.

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Global Journal of Medical Research: K
Interdisciplinary
Volume 16 Issue 3 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Barriers to the Implementation of Essential Intrapartum and Newborn Care Protocol (EINC) in Public and Private Hospitals in Iligan City

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Abstract- Childbirth is a central event to human nature and one that has a great impact on the life of women and their families. Over the years, remarkable progresses were made in the safety and comfort of human labor and birth but there is also an increase in maternal as well as neonatal mortality. The DOH embarked on Essential Intrapartum and Newborn Care (EINC) to address neonatal deaths in the country. This descriptive correlation study was conducted to determine the extent of implementation of the EINC protocol in the three areas: labor room (LR), delivery room (DR), and Neonatal Intensive Care Unit (NICU) of the selected private and public hospitals in Iligan City, and the perceived barriers to its implementation. A sample of 62 staff nurses (86.5%) and midwives (14.5%) were purposively selected from two private hospitals and three public hospitals in Iligan City. A three-part structured questionnaire was utilized to carry out the rationale of the study. The results revealed that the staffs were generally applying the steps/procedures in the EINC protocol in their respective units.

Keywords: essential intrapartum, newborn care, EINC barriers, quantitative research, Philippines.

GJMR-K Classification: NLMC Code: WQ 450

Strictly as per the compliance and regulations of:

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Abstract- Childbirth is a central event to human nature and one that has a great impact on the life of women and their families. Over the years, remarkable progresses were made in the safety and comfort of human labor and birth but there is also an increase in maternal as well as neonatal mortality. The DOH embarked on Essential Intrapartum and Newborn Care (EINC) to address neonatal deaths in the country. This descriptive correlation study was conducted to determine the extent of implementation of the EINC protocol in the three areas: labor room (LR), delivery room (DR), and Neonatal Intensive Care Unit (NICU) of the selected private and public hospitals in Iligan City, and the perceived barriers to its implementation. A sample of 62 staff nurses (86.5%) and midwives (14.5%) were purposively selected from two private hospitals and three public hospitals in Iligan City. A three-part structured questionnaire was utilized to carry out the rationale of the study. The results revealed that the staffs were generally applying the steps/procedures in the EINC protocol in their respective units. Data analysis revealed the following significant relationships between the extent of EINC implementation and the perceived barriers to its implementation: the respondents' perceived barriers in terms of (1) physical set-up, financial constraints and cultural barriers had significant relationship with the extent of EINC implementation in LR; (2) physical set-up and cultural barriers had significant relationship with the extent of EINC implementation in DR; and (3) lack of key skills and expertise and cultural barriers had significant relationship with the extent of EINC implementation in NICU. Moreover, it was further concluded that there was a significant difference in the implementation of EINC protocol between public and private hospitals in Iligan City. The findings underscore the need for healthcare institutions to strengthen their information drive on EINC which can result to its increased implementation which can in turn lead to improved quality of care delivered by health workers attending to institutional deliveries. This may involve engaging and empowering the staff; providing education on best practices and existing deficiencies; discussing potential barriers and introducing the EINC protocol through focused training; and establishing a mechanism for ongoing monitoring and evaluation.

Keywords: essential intrapartum, newborn care, EINC barriers, quantitative research, Philippines.

I. Introduction

Childbirth is central event to human nature and one that has a great impact on the life of women and their families and over the years, remarkable progresses were made in the safety and comfort of human labor and birth but there is also an increase in maternal as well as neonatal mortality despite these progresses. Annually, there are approximately 3.7 million neonatal deaths and 3.3 million stillbirths worldwide (Wardlaw et.al, 2012). The Philippines is one of the 42 countries that account for 90% of under-five mortality worldwide. Thirty seven percent (37%) or 40,000 of them are newborn (United Nations Development Groups, 2012). The high mortality and morbidity rates in newborn are directly related to inappropriate hospital and community practices currently employed throughout the Philippines. Additionally, the current practices in hospitals fell below the recommended World Health Organization (WHO) standards and robbed the newborns of the natural protection offered by the basic recommended interventions (DOH, 2009).

In an attempt to provide quality maternal and newborn care, and to address neonatal deaths in the country, the Department of Health (DOH) embarked on Essential Intrapartum and Newborn Care (EINC). Under the umbrella of Unang Yakap Campaign, the essential newborn care is an evidenced-based strategic interventions aimed at improving newborn care and helping neonatal mortality (Katharina, 2010). With this campaign, the DOH aims to cut down infant mortality in the Philippines by at least half. The campaign employs Essential Newborn Care (ENC) Protocol as a strategy to improve the health of the newborn through interventions before conception, during pregnancy, and soon after birth, and in the postnatal period. The ENC Protocol provides an evidence-based, low cost, low technology package of interventions that will save thousands of lives (Katharina, 2010). In this paper, the terms "EINC" and "Unang Yakap" will be used interchangeably.

The essential newborn care package is a four-step newborn time-bounded intervention undertaken to lessen newborn deaths. Four core steps were recommended in a time bound sequence which includes immediate and thorough drying of the baby,

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early skin-to-skin contact, properly timed cord clamping and non-separation of the newborn and mother for early initiation of breast feeding (DOH, 2009). According to Banzon (2013), Unang Yakap calls for the end of old, routine health-care practices that have been previously deemed "infallible" despite the absence of evidence. For the mother, routine enemas, restriction of food and drinks during labor, routine intravenous fluid insertion, perineal shaving and pundal pressure should be abandoned. For the newborn, routine suctioning upon birth, routine separation of mother and early bathing (less than six hours after birth) must be discontinued. Application of various substances to the umbilical cord and the practice of foot printing should be discouraged, which has no value for the baby.

The recommended EINC practices during the Intrapartum period include continuous maternal support by having a companion of choice during labor and delivery, freedom of movement during labor, monitoring progress of labor, position of choice during labor and delivery, spontaneous pushing in a semi-upright position, non-routine episiotomy and Active Management of the Third Stage of Labor (AMSTL) (Consolidated Annual Report on Activities, 2012).

In the early stages, EINC protocolwas adopted initially by 11 pilot hospitals in Central Luzon, Visayas and 2 hospitals in Mindanao (Chattoe-Brown et.al, 2012).Adventist Medical Center-Iligan, Dr. Uy Hospital Inc., Mercy Community Hospital and Gregorio T. Lluch Memorial Hospital were among the hospitals in Iligan City, which adopted the guidelines of EINC protocol subsequently. Accordingly, these hospitals have provided trainings and seminars on EINC to their staff to ensure that the EINC protocol is implemented correctly in their institutions.

II. Framework

The Hierarchy of Needs theory (Maslow, 1943), the Birth Territory Theory (Fahy et.al, 2008), and the Attachment theory Bowlby and Ainsworth have greatly influenced this study.

The Hierarchy of Needs theory by Maslow (1943) served as the primary theory from which this study was anchored. Maslow attempted to explain what human beings need, which includes five motivational needs; often depicted as hierarchical levels within a pyramid. This five-stage model can be divided into basic or deficiency needs e.g. physiological, safety, love, and esteem and growth needs self-actualization (McLeod, 2007). The deficiency or basic needs are said to motivate people when they are unmet. Also, the need to fulfill such needs will become stronger the longer the duration they are denied. In this study, meeting the needs on Maslow's hierarchy is essential to a woman's emotional wellbeing, and hence important to both the physical progress and the woman's experience of birth.

The Birth Territory Theory (Fahy, et.al. 2008) refers to the features of the birth room, called the 'terrain', and the use of power within the room, called 'jurisdiction'. Terrain' is a major sub-concept of Birth Territory. It denotes the physical features and geographical area of the individual birth space, including the furniture and accessories that the woman and her support people use for labor and birth. The central proposition of Birth Territory theory is that when midwives and healthcare professionals create and maintain ideal environmental conditions, maximum support is provided to the woman and fetus in labor and birth which results in an increased likelihood that the woman will give birth under her own power, be more satisfied with the experience and adapt with ease in the post birth period which is exactly what the Essential Intrapartum and Newborn Care (EINC) protocol intends to accomplish.

The basic tenets of the Attachment theory by Bowlby and Ainsworth is about a child's tie to the mother and its disruption through separation, deprivation, and bereavement (McLeod, 2008). One of the components of EINC is 'early attachment' and non-separation between mother and newborn. Bowlby proposed that infant's unmistakable attachment behavior is made up of a number of component instinctual responses that have the function of binding the infant to the mother and the mother to the infant. These component responses (among them sucking, clinging, and following, as well as the signaling behaviors of smiling and crying) mature relatively independently during the first year of life and become increasingly integrated and focused on the mother. In addition to this, Bowlby believed that attachment had an evolutionary component; it aids in survival. He stated that "the propensity to make strong emotional bonds to particular individuals is a basic component of human nature".

III. Objectives of the Study

Giving birth in developing countries like the Philippines has been seen as more fatal and dangerous for mothers and infants alike. Thus, the need for a paradigm shift from the prevailing standard procedures into the new EINC protocol cannot be over emphasized. According to Banzon (2013) EINC is easily implementable, be it the rural health unit, to lying-in clinic and even the hospital setting. Moreover, EINC is about health systems. It is a choreographed set of actions requiring team effort from health professionals—obstetricians, anesthesiologists and pediatricians alike, administrative/support staff of the birthing facility and the mother's family. Thus, failure to implement does not mean failure of one, but failure of the system (Banzon, 2013). The primary goal of this research was to determine the extent of implementation of the EINC

protocol in public and private hospitals in Iligan City. The following objectives add towards the main aim of the investigation:

1. To find out the staff's perceived barriers to the implementation of Essential Intrapartum and Newborn Care (EINC) protocol in their respective units.
2. To find out the relationship between EINC implementation and the perceived barriers to its implementation in the staff's respective units.

a) Statement of the Problem

This study was conducted to determine the extent of implementation of the Essential Intrapartum and Newborn Care (EINC) protocol in public and private hospitals in Iligan City. More specifically, the study aims to answer the following questions:

1. What are the staffs' perceived barriers in the implementation of EINC protocol in the hospitals in Iligan City?
2. What is the extent of implementation of EINC protocol in the private and public hospitals in Iligan City?
3. Is there a significant relationship between the extent of EINC implementation and the perceived barriers in its implementation.

b) Significance of the Problem

This study aimed to determine the extent of implementation of the EINC protocol in order to convey a better understanding of its application in the hospitals in Iligan City. Additionally, the results of this study may serve as basis for assessment, performance or feedback/evaluation tool of the extent of implementation of the EINC. It will also be a means to monitor staff in the delivery of quality care services in the delivery room and neonatal care units. Furthermore, the results of this study can be used for training, retraining and continuing education for hospital staff members as this may improve overall organizational performance. Lastly, the results of this study may result in less maternal and neonatal deaths and complications.

IV. Methodology

a) Research Design

This investigation employsa quantitative descriptive correlational design to answer the research questions. The descriptive design was used to describe the extent of EINC implementation and theperceived barriers to its implementation among staff nurses and midwives in the hospitals of Iligan City. The correlation method of research was used to investigate the relationship between the extent of EINC implementation and the perceived barriers to EINC implementation.

b) Research Participants and Research Locale

For the purpose of selecting the setting of the study, five hospitals in Iligan City (2 private hospitals and three public hospital) were selected as the locale and the delivery room (DR), labor room (LR), and neonatal intensive care unit (NICU) were the focus areas of the study. These hospitals were purposefully selected since they were among the first implementers of EINC protocol in Iligan City. The respondents were staff nurses and midwives who were purposively chosen based on the following criteria: (1) He or she must be currently assigned in one of the areas of OB-ER, DR, or NICU; and (2) He or she must have been working in one of the aforementioned areas for at least six months after the implementation of the EINC protocol in their respective areas. The subsequent sample consisted of 53 nurses and 9 midwives who were working for not less than six months in one or more of the three areas of LR, DR, and NICU. The respondents were mostly female with a significant number of the respondents who were single, with ages ranging from 21 to 51 years old, earning a monthly income of less than PhP 10,000.00 with 1 to 5 year length of service.

c) Sampling Procedure

A purposive sampling method without replacement was used in selecting the hospital staff to be the respondents in this study from all the members of the entire target population. Additionally all registered nurses and registered midwives assigned in the special areas uneder study (OB, LR, DR) of the selected private and public hospitals in Iligan City and Lanao del Norte as of the time of data gathering have met the inclusion criteria required by the study.

d) Research Instrument

To determine the extent of implementation of Essential Intrapartum and Newborn Care (EINC) in the selected hospitals in Iligan City and Lanao del Norte, the researcher utilized a self-made structured four-part questionnaire.

Part I of the research instrument covered the personal profile of the respondents and includes measures of demographic characteristics such as age, gender, marital status, religion, professional degree, highest educational attainment, type of hospital employed, status of employment, monthly income, work setting, and length of service in the aforementioned special areas of the hospital where currently working. Part II of the research instrument consisted of the possible barriers to the implementation of evidence-based practice e.g. EINC/Unang Yakap protocol. The possible barriers that have been pre-identified by the researcher fall into eight categories, namely; physical set up, institutional support, financial constraints, time constraints, lack of resources, lack key skills and expertise, lack of proper monitoring and evaluation, and cultural barriers. Under each of these categories, the respondents indicated their answers as to the perceived barrier to the implementation of the said protocol and answered the choices that apply. Part III of the research

instrument was adopted from the EINC step-by-step procedures as recommended by the DOH and was revised and summarized by the researcher to fit the objective of the present study. Part III of the research instrument was further subdivided into three parts: A.) Intrapartum care composed of seven statements answered by labor room midwives and nurses who were currently assigned in the said area; B.) Intrapartum care comprised of eighteen statements answered by staff nurses and midwives assigned in the delivery room and C.) The newborn care- sixteen- step protocol answered by respondents assigned in the NICU. In this part of the questionnaire, the respondents were asked to indicate the frequency of their implementation of each of the step in the DOH recommended EINC protocol using the following scale: namely: 5 - *Always*; 4 – *Often*; 3 – *Sometimes*; 2 – *Seldom*; and 1 – *Never*.

A pilot study was carried out to revise the questionnaire and for item analysis. The validity and reliability of the questionnaire was measured through computing Cronbach's alpha, which shows high reliability values indicating that all of the items used for each component in the questionnaire have a high and consistent reliability values.

Reliability Coefficients	N of Items	Chronbach's Alpha	Reliability Interpretation
Extent of Implementation of the EINC Protocol in Labor Room	7	0.849	High
Extent of Implementation of the EINC Protocol in Delivery Room	18	0.747	High
Extent of Implementation of the EINC Protocol in Nursery Room	16	0.874	High

e) Collection of Data

Prior to the actual conduct of the study, the researcher visited the different hospitals in Iligan City. A preliminary talk was conducted with the chief nurse of each hospital to explain the purpose as well as the possible benefits of the research to the hospitals under study. During this time, the researcher also requested for a list of the registered nurses and registered midwives assigned in the labor room, delivery room and neonatal intensive care unit with the corresponding length of service in their respective areas. The purpose of which was to determine the actual number of respondents. All registered nurses and registered midwives who had served for less than six months in the three areas of OB-ER, DR, and NICU were eliminated as potential respondents. Another visit was made again to formally deliver the permission letter to seek approval of the respondents' participation in the study. It was also an opportunity to get the respective schedules of the respondents to facilitate the easy gathering of data. The final and subsequent visits were made to invite the respondents to participate in the study. Among the 62 staff nurses and midwives who agreed to participate, all of them completed all the questionnaires (100% response rate). The data gathered were tallied, tabulated, and then subjected to statistical treatment.

f) Treatment of Data

The data was analyzed through the statistical package for the social sciences. A series of Cramer's V correlation was used to examine the association between the extent of EINC implementation and the sources of EINC knowledge. The alpha level was set at .05 for statistical significance.

V. Findings

Table 1 : Frequency and Percentage Distribution, Respondents' Perceived Barriers in the Implementation of EINC Protocol in terms of Physical Set-up, Institutional Support and Financial Constraints

Perceived Barriers in the Implementation of EINC Protocol	*F*	*%*
Physical Set-Up		
The space of the unit/area is limited and congested	29	46.8
Lack of facilities e.g. as beds, delivery tables	25	40.3
Lack of privacy	15	24.2
Hand washing area is not near the unit	14	22.6
Institutional Support		
Lack of support from the hospital administration	23	37.1
Lack of support from the head of the department	4	6.5
Lack of support from the nursing service unit	4	6.5

Lack of support from medical staff (OB-Gyne)	4	6.5
Financial Constraints		
No funding available to procure needed materials, supplies and equipment	24	38.7
No funding available to renovate the unit to cater needs of client	20	32.3
No funding to undergo formal training and seminar on EINC by the hospital management	20	32.3
No funds available for reproduction of guideline materials	10	16.1

Table 1 shows the respondents' perceived barriers to the implementation of EINC/Unang Yakap Protocol in their respective departments (DR, LR & NICU) in terms of physical set up of the unit/area, institutional support from the administration for the proper implementation of the said protocol, and financial constraints in the effective implementation of the protocol in the unit/area.

Based on respondents' perceived barriers to the implementation of the EINC Protocol/Unang Yakap Protocol vis a vis Physical Set-up, almost half of the respondents (46.8%) believed that the space of the unit/area is limited and congested for the proper implementation of the EINC/Unang Yakap Protocol while nearly half of the respondents (40.3%) believed that lack of facilities e.g. as beds, delivery tables is a barrier in the proper implementation of the protocol. Thus, a majority or 87% of the respondents believe that lack of adequate space and necessary facilities are the main hindrance in the proper implementation of the said protocol in their respective area/s of assignment. For public hospitals, this can largely be attributed to budgetary constraints.

As for Institutional support, 37.1% of the respondents believe that lack of support from the hospital administration is a barrier in the implementation of the protocol and only a few believe that support from the heads of the department, nursing service unit, or from the medical staff is lacking. As for financial constraints, the lack of funds affects most aspects of EINC Protocol implementation as shown in the almost even distribution of barriers based on financial constraints. The results show that the respondents believe that the proper implementation of EINC depends on the availability of funds to procure needed materials, supplies, and equipment. Additionally, they also feel that even if the unit/area is congested, no funds are available to renovate the unit thereby limiting the full implementation of EINC.

Table 2 : Frequency and Percentage Distribution, Respondents' Perceived Barriers in the Implementation of EINC Protocol in terms of Time Constraints, Lack of Resources & Lack of Key Skills & Expertise

Perceived Barriers in the Implementation of EINC Protocol	*F*	*%*
Time Constraints		
Staff to patient ratio is not proportional	41	66.1
Too many things to accomplish e.g. documentation	23	37.1
Surge of patient admission is unpredictable	18	29.0
Waiting time for medical personnel to give order for appropriate interventions is delayed	8	12.9
No patience to wait in patients with delayed progress of labor	1	1.6
Lack of Resources		
The unit is under staff	35	56.5
Inadequate supply and equipment	24	38.7
Manual not available for immediate reference	5	8.1
Medication e.g. Oxytocin is not readily available	4	6.5
Lack of Key Skills & Expertise	25	40.3
Lack of training/ seminar		
Unfamiliar with the new protocol	9	14.5
No opportunity to learn the EINC protocol	5	8.1
Protocol/ EINC guideline is not clearly understood	0	0

Table 2 shows the respondents' perceived barriers to the implementation of EINC/Unang Yakap Protocol in their respective departments (Delivery Room, Labor Room, Neonatal Intensive Care Unit) in the

selected hospitals in Iligan City and Lanao del Norte in terms of time constraints in executing all the necessary steps required for EINC, lack of resources, and lack of key skills and expertise of personnel in EINC.

In terms of time constraints, 66.1% of respondents believe that proper implementation of the EINC Protocol is hindered mainly by disproportional staff to patient ratio, meaning that a nurse or midwife has to attend to an inordinately high number of patients. Add to this the documentary functions of the staff and you have staff that have to attend to so many patients at the same time that they have to prepare reports.

A study (Gale, 2001) was conducted to examine the amount of support being provided by nurses during the childbirth and factors that influence provision of support. It was found out in that study that nurses spent only 12.4% of their total time providing supportive care to laboring women. Barriers to providing support to patient identified by nurses include lack of time and insufficient staff.

Lack of resources as a barrier pertains to inadequate number of staff in the unit to cater to the needs of all patients which relates to time constraint as a barrier such as disproportional staff to patient ratio and of course, inadequate supply and equipment. Again, this is due to the lack of funds in the hospitals surveyed as validated by the results obtained in Table 16 showing that financial constraint as a barrier affects most aspects of EINC Protocol implementation.

As for lack of key skills and expertise as a barrier to the proper implementation of EINC Protocol, 40% of the respondents feel this is due to lack of training and unfamiliarity with new protocol which can be corrected with additional training. Provided, of course, that the hospitals have the funds.

According to a study (Waldemar, 2010) funded by the National Institutes of Health and the Bill and Melinda Gates Foundation, the rate of stillbirths in rural areas of six developing countries fell more than 30 percent following a basic training program in newborn care for birth attendants,. The study tracked more than 120,000 births. The study tested the efficacy of a three-day Essential Newborn Care training regimen that covers basic newborn care techniques, the importance of early breastfeeding, how to keep infants warm and dry, and signs of serious health problems. The findings in that study suggest that a low-cost instructional regimen for birth attendants can be effective in reducing stillbirths in parts of the world where most births are not attended by a physician. The study authors found that the overall rate of infant death during the first 7 days of life did not change among infants who had been administered the essential newborn care regimen. However, the rate of stillbirths dropped sharply -- from 23 per 1,000 deliveries to 15.9 per 1,000. The researchers believe these improvements were seen in infants who had not drawn a breath on their own and would have been considered to have been born dead by birth attendants who had not received the early newborn care training. The researchers explained that many infants do not take a breath when they are first born. In the majority of these cases, some kind of stimulation -- rubbing the back or tapping the soles of the feet -- will start the baby breathing on its own. Other infants need air pushed into their lungs. Birth attendants without training in recognizing and resuscitating newborns who do not breathe at birth may consider the babies to be stillborn and not attempt to revive them. The study authors concluded that the essential newborn care training was most effective in providing attendants needed skills and expertise in newborn resuscitation. The greatest decrease in stillbirth rates was among deliveries attended by nurses, midwives, and traditional attendants, all of whom, the researchers believe, would likely not have received such training.

The findings in the present study that lack of key skills and expertise is a barrier to the proper implementation of EINC Protocol is further supported by a study conducted in India to evaluate the effectiveness of the Essential Newborn Care Package in reducing neonatal sepsis. The study identified the key themes as barriers for the uptake of interventions included in the Essential Newborn Care Package were - skills of care provider, increased, risk factors and health seeking behavior (Masters, 2008).

Table 3 : Frequency and Percentage Distribution, Respondents' Perceived Barriers in the Implementation of EINC Protocol in terms of Lack of Proper Monitoring and Evaluation and Cultural Barriers

Perceived Barriers in the Implementation of EINC Protocol	*F*	*%*
Lack of Proper Monitoring and Evaluation		
1. No evaluation carried out to assess implementation of EINC protocol	24	38.7
2. No monitoring conducted by heads/supervisor	12	19.4
3. Lack of clear guidelines (sanctions) if protocol is not observed	9	14.5
4. No assessment initiated by the nursing service department	3	4.8
Cultural Barriers		
1. Others staff are doing the old already established practices	15	24.2
2. Peer pressure	12	19.4

3.	Feeling of not having the energy or desire to change the old way	3	4.8
4.	Perceived self-inefficacy to change	2	3.2

Table 3 shows the respondents' perceived barriers to the implementation of EINC/Unang Yakap Protocol in their respective departments (Delivery Room, Labor Room, Neonatal Intensive Care Unit) in the selected hospitals in Iligan City and Lanao del Norte in terms of lack of proper monitoring and evaluation and cultural barriers in the implementation of EINC Protocol.

As for Lack of Proper Monitoring and Evaluation as a barrier, the respondents feel that lack of evaluation, monitoring, and clear guidelines are the main barriers in the implementation of EINC Protocol in their respective units/area. 38.7% of the respondents believe that their respective hospitals do not evaluate whether or not the EINC Protocol is being carried out properly while 19.4% of the respondents believe that their heads/supervisors do not monitor the staff and personnel if they are implementing the said protocol or not. To correct the situation, the hospital administration should have clear guidelines, which should require supervisors to regularly monitor the EINC Protocol and submit their evaluation and recommendations to their superiors.

Cultural barriers are related to the social patterns in the area/unit that discourage the adoption of EINC protocol, for instance, older colleagues still have considerable say over decisions concerning pregnancy, birth and child care. As for cultural constraints, the main culprit is the tendency of the staff to do what they are used to doing or doing the already established practices. 24.2% of the respondents feel that the effective implementation of the EINC Protocol in their respective units/areas is hindered by the staff resistance to change while 19.4% of the respondents feel that peer pressure impacts on the full implementation of the said protocol.

Based on these findings, it can be inferred that the respondents' tendency of doing the established practices in their respective area/s and their resistance to change is greatly influenced by their peers. This can of course, be addressed by the hospital administration through meetings and discussions, as well as policy guidelines. According to Banzon (2013) Unang Yakap is about health systems. EINC is more than just pediatricians taking care of newborns; it is a choreographed set of actions requiring team effort from health professionals—obstetricians, anesthesiologists and pediatricians alike, administrative/support staff of the birthing facility and the mother's family. Thus, failure to implement does not mean failure of one, but failure of the system.

Cultural barriers as a hindrance to the proper implementation of the EINC Protocol should be addressed in the context of Philippine setting. Masters (2008) conducted a study in India to evaluate the effectiveness of the Essential Newborn Care Package in reducing neonatal sepsis. Findings in this study are consistent with priorities in nursing practice which emphasis recognition of cultural influences of care. The study concluded that although the Essential Newborn Care Package is recognized as having had some impact on reducing neonatal sepsis in India, the conclusion of this critical review is that mechanisms employed for the implementation of the Essential Newborn Care Package were inappropriate for the context of India, thus undermining program efficacy. Recommendations were made for future practice and the development of policy, outlining clear delineation of health care workers roles and the responsibilities of services for the provision of a care continuum. Development of nursing practice requires research to identify and evaluate socio-cultural, environmental and behavioral variables which influence neonatal health for the development of operational strategies that exhibit socio-cultural sensitivity.

Table 4 : Frequency and Percentage Distribution, Extent of Implementation of EINC Protocol in Terms of Steps/ Procedure for Intrapartum Care According to Labor Room Staff*

	Steps/ Procedure Intrapartum Care	5 Always		4 Often		3 Sometimes		2 Seldom		1 Never		Mean	
		F	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*F*	*%*	*V*	*I*
1.	Assess client at the start of labor	29	85.3	2	5.9	3	8.8	0	0	0	0	4.8	A
2.	Use partograph to monitor progress of labor	12	35.3	4	11.8	0	0	9	26.5	9	26.5	3.0	O
3.	Wash hands before and after care of each client	30	88.2	4	11.8	0	0	0	0	0	0	4.9	A
4.	Monitor progress of labor	29	85.3	2	5.9	3	8.8	0	0	0	0	4.8	A
5.	Allow fluids & light diet during labor	12	35.3	15	44.1	5	14.7	2	5.9	0	0	4.1	O
6.	Start IV only when necessary & if ordered by the attending physician	30	88.2	3	8.8	1	2.9	0	0	0	0	4.9	A

7.	Allow patient to have SO in the labor room to be present during labor	16	47.1	4	11.8	13	38.2	0	0	1	2.9	4.0	O
GRAND MEAN												**4.4**	**A**

Mean LEGEND:	Always (A)	4.3 – 5.0	v =	Value
	Often (O)	3.5 – 4.2	I =	Interpretation
	Sometimes (SO)	2.7 – 3.4		
	Seldom (SE)	1.9 – 2.6	*n=	34
	Never (N)	1.0 – 1.8		

34 respondents who were assigned in the Labor Room of the five hospitals under study were surveyed to determine the extent of their application of the seven steps/procedures for intrapartum care in the Labor Room. The findings indicates that generally the steps/procedures under intrapartum were 'always' applied by the respondents with a grand mean of 4.4. Four out of the seven steps/procedures under intrapartum care were 'always' applied while three steps were 'often' applied. Based on ranking, the procedures of '*wasing hands before and after care of each client'* and '*starting IV only when necessary and if ordered by the attending physician'* were the mostly applied steps under intrapartum care in the Labor Room with a mean score of 4.9 for each of the procedures.

On the other hand, procedure of '*using partograph to monitor progress of labor'* was the least applied step under intrapartum care in the Labor Room with a mean score of 3.0. This finding is consistent with the findings of a study by Kaur, et. al. (2010) which was conducted to assess the frequency with which the use of partograph could be used to monitor the progress of labor. It was found out in that study that the use of partograph with stringent evaluation and recording frequency is not feasible under normal labor and delivery room conditions unless 1:1 nursing care is available. However, EINC promotes the use of the old reliable partographsso that any trained birth attendant can track the progress of labor and refer complicated pregnancies as early as necessary. According to Banzon (2013), it is easily implementable, be it the rural health unit, to lying-in clinic and even the hospital setting

It is also significant that thirteen respondents only 'sometimes' apply the procedure of '*allowing patient to have significant other in the labor room to be present during labor'* and only five respondents 'sometimes' '*allow fluids and light diet during labor'*. EINC desires continuous support for the expectant mother by ensuring that she has a companion while in labor and delivery and that she is able to move around easily (Banzon, 2013). Moreover, Abraham Maslow's Hierarchy of Needs states that people are motivated to achieve certain needs. When one need is fulfilled a person seeks to fulfil the next one, and so on (McLeod, 2007). When the expectant mother is denied food and drink during labor; her needs cannot be fulfilled. Hence, meeting the needs of the expectant mother is essential to a woman's emotional well-being, and important to both the physical progress and the woman's experience of birth. It can also be traumatic for a woman who feels alone, deserted, or unloved when she is taken away from significant others to be prepped in the delivery room. With so much frustration of women's needs, birth experiences can be unsatisfying and may lead to complications. Thus, for women who are able to have all their needs met at birth can be a highly satisfying event, maybe even lead to a self-actualizing experience.

Table 4 : Frequency and Percentage Distribution, Extent of Implementation of EINC Protocol in Terms of Steps/ Procedure for Intrapartum Care According to Delivery Room Staff*

	Steps/ Procedure Intrapartum Care	5 Always		4 Often		3 Sometimes		2 Seldom		1 Never		Mean	
		f	%	*F*	%	*f*	%	*f*	%	*F*	%	*v*	*I*
1.	Allow patient to have SO to be present inside the delivery room	8	25.0	4	9.4	11	28.1	7	21.9	5	15.6	3.1	SO
2.	Encourage the mother to void before lying on delivery table.	17	53.1	3	9.4	12	31.3	1	3.1	1	3.1	4.0	O
3.	Permit mobility & position of choice during labor	12	37.5	15	43.8	3	6.3	2	6.3	3	6.3	4.0	O
4.	Turn off aircon/electric fan when patient is in the delivery room	8	25.0	8	25.0	12	31.3	5	12.5	2	6.3	3.4	SO
5.	Wash hands thoroughly before and after each care	31	96.9	1	3.1	0	0	0	0	0	0	5.0	A

6.	Put on double glove if handling delivery & remove first glove before cutting the cord of infant	11	34.4	6	18.8	11	34.4	4	12.5	0	0	3.6	O
7.	Assist patient into a comfortable position in the delivery table, as upright as possible.	19	59.4	9	28.1	2	6.3	2	6.3	0	0	4.3	A
8.	Allow the mother to push as she wishes with contractions	21	65.6	6	18.8	1	3.1	0	0	4	12.5	4.3	A
9.	Provide perennial support and controlled delivery of head	27	84.4	2	6.3	3	9.4	0	0	0	0	4.7	A
10.	Limit practice of episiotomy only when necessary	21	65.6	4	12.5	6	18.8	1	3.1	0	0	4.3	A
11.	No performance of fundal push	8	25.0	13	40.6	9	28.1	2	8.3	0	0	3.7	O
12.	Callout the time of birth & gender	30	93.8	2	6.3	0	0	0	0	0	0	5.0	A
13.	Place baby on the mother's abdomen.	29	90.6	3	9.4	0	0	0	0	0	0	4.9	A
14.	Administer 10 IU of Oxytocin IM within 1 minute after baby's birth	15	46.9	8	25.0	3	9.4	1	3.1	5	15.6	3.8	O
15.	Perform controlled traction when delivering placenta with counter traction on the uterus	24	75.0	5	15.6	2	6.3	0	0	1	3.1	4.5	A
16.	Massage the uterus after placental expulsion	26	81.3	3	9.4	3	9.4	0	0	0	0	4.7	A
17.	Examine and assess the lower vagina & perineum	27	84.4	3	9.4	3	9.4	0	0	0	0	4.8	A
18.	Monitor the mother & the baby immediately after the delivery of the placenta	28	87.5	4	12.5	0	0	0	0	0	0	4.9	A
GRAND MEAN												**4.3**	**A**

Mean LEGEND:				
	Always (A)	4.3 – 5.0	v =	Value
	Often (O)	3.5 – 4.2	I =	Interpretation
	Sometimes (SO)	2.7 – 3.4		
	Seldom (SE)	1.9 – 2.6	*n=	35
	Never (N)	2.0 – 1.8		

Table 4 shows the extent of the application of the steps/procedures for intrapartum care among the Delivery Room staff in the five hospitals under study. The findings indicates that generally, the steps/procedures under intrapartum were 'always' applied by the respondents in the care of the patients during the intrapartum period in the delivery room with a grand mean of 4.3. Eleven out of the eighteen steps/procedures under intrapartum care in the delivery room were 'always' applied while five steps were 'often' applied and two were 'sometimes' applied in the delivery room during the intrapartum period.

Based on ranking, the procedures of '*washing hands before and after care of each client* and '*calling out the time of birth and gender of the newborn'* were the mostly applied procedures under intrapartum care in the delivery room with a mean score of 5.0 for each of the procedures. The findings can be attributed to the fact that washing of hands before and after providing care to the patient is a universal practice among healthcare professionals in any healthcare setting and not limited to the delivery rooms only to prevent the transmission of microorganisms and cross-contamination between and among patients. According to the World Health Organization, the single most important measure in reducing the risk of cross-infection is effective hand hygiene by health care workers (WHO, 2009). Additionally, the procedure of calling out the name and gender of the newborn although specific to the delivery room only is a procedure that is being practiced even before the implementation of the EINC Protocol.

On the other hand, the procedure of '*allowing patient to have significant other to be present inside the delivery room'* was the least applied procedure in the delivery room with a mean score of 3.1. This finding may attributed to the fact that in the Philippine setting family members were traditionally not allowed to enter in the labor room and delivery room on the premise that the woman in labor may simply adopt the sick role and take to bed. However, the central proposition of the Birth

Territory theory is that when midwives and healthcare professionals create and maintain ideal environmental conditions and maximum support is provided by significant others to the woman in labor will result in an increased likelihood that the woman will give birth under her own power, be more satisfied with the experience and adapt with ease in the post birth period which is exactly what the Essential Intrapartum and Newborn Care (EINC) protocol intends to accomplish.

Table 5 : Frequency and Percentage Distribution, Extent of Implementation of EINC Protocol in terms of Steps/ Procedure of Newborn Care According to NICU Staff*

Steps/ Procedure Newborn Care	5 Always		4 Often		3 Sometimes		2 Seldom		1 Never		Mean	
	f	%	*F*	%	*f*	%	*f*	%	*F*	%	*V*	*I*
1. Thorough drying of baby for 30 seconds	33	100	0	0	0	0	0	0	0	0	5.0	A
2. Assess breathing of baby & perform resuscitation when needed	31	93.9	1	3.0	1	3.0	0	0	0	0	4.9	A
3. Place the baby on mother's abdomen for skin-to-skin contact	27	81.8	4	12.1	2	6.1	0	0	0	0	4.8	A
4. Place baby in prone position to drain secretions	27	81.8	6	18.2	0	0	0	0	0	0	4.8	A
5. Clamp the cord using plastic sterile clamp 2 cm from the base	32	97.0	1	3.0	0	0	0	0	0	0	4.9	A
6. Clamp using forceps 3 cm from the plastic clamp	32	97.0	1	3.0	0	0	0	0	0	0	4.9	A
7. Cut the cord 2-3 minutes after the delivery of the baby or when cord pulsation stops	28	84.8	4	12.1	1	3.0	0	0	0	0	4.8	A
8. Discard the wet cloth use to dry baby	32	97.0	1	3.0	0	0	0	0	0	0	4.9	A
9. Wrap the mother & baby with linen	23	69.7	7	21.2	3	9.1	0	0	0	0	4.6	A
10. Put bonnet on baby's head	22	66.7	8	24.2	2	6.1	1	3.0	0	0	4.6	A
11. Apply name tag on baby's ankle	31	93.9	1	3.0	1	3.0	0	0	0	0	4.9	A
12. Initiate early breast feeding	21	63.6	11	33.3	1	3.0	0	0	0	0	4.6	A
13. Monitor both baby and mother	30	90.9	3	9.1	0	0	0	0	0	0	4.9	A
14. After 60mins of skin-to-skin contact and adequate latching on, do eye care, PE, weigh, measure, inject Vitamin K, Hepa B vaccine, BCG	29	87.9	3	9.1	1	3.0	0	0	0	0	4.9	A
15. Non separation of baby from mother.	29	87.9	3	9.1	1	3.0	0	0	0	0	4.0	O
16. Transport both mother and baby to room together.	11	33.3	11	33.3	5	15.2	4	12.1	2	6.1	3.8	O
GRAND MEAN											**4.7**	**A**

Mean LEGEND:			
	Always (A)	4.3 – 5.0	v = Value
	Often (O)	3.5 – 4.2	I = Interpretation
	Sometimes (SO)	2.7 – 3.4	
	Seldom (SE)	1.9 – 2.6	*n= 33
	Never (N)	3.0 – 1.8	

33 respondents who were assigned in the Neonatal Intensive Care Unit (NICU) were surveyed to determined the extent of their application of the 16 steps/procedures for newborn care in the nursery room. The findings indicate that generally the steps/procedures for newborn care were 'always' applied by the respondents in NICU. These findings can be attributed to the fact that 25 out of the 62

respondents were assigned in NICU(40.3%) and other 8 respondents (12.9%) were rotated in the the three areas including NICU. It can be inferred that more staff are available to provide care to the newborns.

Based on ranking, the procedure of '*thorough drying of the baby for 30 seconds'* was the mostly applied procedure with a mean score of 5.0. This finding signifies that the respondents recognize the importance of drying the baby immediately after birth because the infant is extremely vulnerable to heat loss because his/her body surface area is great in relation to his/her weight and he/she has relatively little subcutaneous weight. Heat loss after delivery is increased by the cool delivery room and the infant's wet skin (Banzon, 2013).

On the other hand, the findings also shows that the respondents did not 'always' apply one of the important mandates of EINC Protocol which is the non-separation of the newborn from the mother, not even in the nursery (Banzon, 2013). Aside from the fact that the baby must remain in skin-to-skin contact so that breast-feeding can begin immediately and skin-to-skin contact provides additional warmth to the newborn, the non-separation of the mother and newborn is essential to the development of attachment between mother and baby. According to Bowlby's Attachment Theory (1991), attachment between mother and baby had an evolutionary component; it aids in survival. He stated that "the propensity to make strong emotional bonds to particular individuals is a basic component of human nature".

Table 6 : Perceived Barriers in the Implementation of EINC Protocol & the Extent of Implementation by Area of Assignment

Tested Variables Perceived Barriers by Area of Assignment		Cramer's V Value	Computed p – Value	Interpretation
Physical Set-Up				
Hand washing area is not accessible	LRIC	.290	.240	NS
	DRIC	**.457**	**.026**	*
	NRNC	.140	.422	NS
Financial Constraints				
No funding available to procure needed materials, supplies and equipment	LRIC	**.437**	**.039**	*
	DRIC	**.544**	**.006**	*
	NRNC	.070	.687	NS
Lack of Key Skills & Expertise				
Lack of training/ seminar	LRIC	.249	.348	NS
	DRIC	.270	.279	NS
	NRNC	**.378**	**.030**	*
Cultural Barriers				
Others staff are doing the old already established practices	LRIC	**.424**	**.047**	*
	DRIC	**.561**	**.004**	**
	NRNC	.193	.268	NS
Peer pressure	LRIC	.290	.240	NS
	DRIC	**.398**	**.065**	*
	NRNC	.052	.763	NS
Perceived self-inadequacy to change	LRIC	.211	.433	NS
	DRIC	.142	.675	NS
	NRNC	**.490**	**.005**	**

NS – not significant ($p \geq 0.05$)
* Cramer's V is significant ($p \leq .05$ level)
LRIC – Labor Room Intrapartum Care
DRIC – Delivery Room Intrapartum Care
NRNC – Nursery Room Newborn Care

With the use of the Cramer's V Value, the respondents' perceived barriers to the implementation of EINC protocol (physical set-up; institutional support; financial constraints; time constraints; lack of resources; lack of key skills and expertise; lack of proper monitoring and evaluation; and cultural barriers) and the extent of implementation of EINC protocol in the labor room (LRIC), delivery room (DR), and nursery room (NICU) were correlated to determine if there is a significant relationship between the variables.

The results show that out of the eight identified barriers to the implementation of EINC protocol, only the barrier in terms of '*hand washing area is not accessible'* under the physical set-up category had significant relationship with the extent of implementation of EINC protocol in the delivery room.This can be attributed to

the fact that hand washing is the most effective way of reducing the risk of transmission of microorganisms in any healthcare setting, most especially in the delivery room where the nurse or midwife who will deliver the baby and the rest of the staff assigned in the DR have to protect both themselves and the patients (mother and newborn) due to the frequency of handling large amounts of body fluids during the birth process. In an article exploring Dr. Jose Fabella Medical Hospital's transition to EINC (Miranda, 2011), Dr. Fernandez-Tan stated that a glow germ activity conducted to test the staff's hand washing practices revealed that the staff practice new proper hand washing techniques but it was not done as regularly as it should be. As a result, opportunities for contamination has been observed during delivery assessment, said Dr. Fernandez-Tan. To this effect more sinks, soap dispenser, and hand dryers were installed in the labor and delivery rooms, NICU and other key areas in the hospital.

While the barrier in terms of *'no funding available to procure needed materials, supplies and equipment'* under financial constraints category had significant relationship with the extent of implementation of EINC protocol in both the labor and delivery rooms. This can be attributed to the general lack of funding for government hospitals, which mostly derive financial support from the Department of Health. The DOH of course, has to compete with other government departments like the Department of Education and the Department of Social Welfare for budgetary allocation. On the other hand, private hospitals also have to allocate funds to various units of the hospital itself, like the ICU, Emergency Room, Out-patient Department and others. Further, a successful implementation of any program needs sufficient funding to procure the needed materials, supplies, and equipment. Even if the staff were motivated to implement the EINC protocol, they will not be able to do so without proper supplies and materials.

The barrier in terms of '*lack of training/ seminar'* under lack of key skills and expertise had significant relationship with the extent of implementation of EINC protocol in the nursery room. As cited in an article exploring Dr. Jose Fabella Medical Hospital's transition to EINC (Miranda, 2011), implementing EINC has enhanced the staff's' performance of the four core-steps in a properly sequenced and time bound manner. Before EINC training, immediate and thorough drying was performed less than 30 seconds after delivery in 92% of deliveries, with a median time of 7 seconds. Repeat assessment conducted by EINC project staff in May 2011, showed marked improvement in immediate & thorough drying which was performed less than 30 seconds after delivery in 100% of babies. Likewise, early skin-to-skin contact with the baby positioned prone on the mother's chest or abdomen is already marked at mean time of 84 seconds with 100% of babies positioned at less than 5 minutes compared to pre-training time of 153 seconds and 95% at less than 5 minutes. Prior to training, 46% of babies were separated from their mothers for newborn procedures, which were done before their first breastfeed. After training, 70% of babies completed their first breastfeed before newborn procedures were performed. Consequently, this has resulted to an improvement in breastfeeding support with 40% of babies delivered breastfeeding within an hour compared to only 4%, pre-training. Other notable improvements in newborn care that were observed since the hospital has implemented EINC include elimination of unnecessary suctioning, revision of criteria for admission to the potentially septic unit, and the use of self-monitoring tools for roomed-in newborns -- elimination of air draft in the delivery area, reduction in separation of mother from baby from 46% to 20%. However, Fabella's transition to EINC required a number of changes and adjustments. As the saying goes, 'old habits die hard.' Constant push and convincing had to be done to ensure that the medical and nursing staff along with the consultants abide by the new protocol. Hospital memos, orientation and training of all hospital staff were done to ensure that complete implementation was achieved. EINC training was included in the orientation of the hospital's new residents, nursing trainees, and even students and volunteers from accredited schools were also required to attend the EINC training/orientation workshops.

As to cultural barriers, in terms of the staff's resistance to adopt the new protocol, *'others staff are doing the already established practices'* was highly correlated with the extent of implementation of EINC protocol in the labor room and delivery room while peer pressure was moderately correlated with the extent of implementation of EINC protocol in the delivery room only. On the other hand, the cultural barrier in terms of the staff's perceived self-inadequacy to change *'perceived self-inefficacy to change'* was highly correlated with the extent of implementation of EINC protocol in the NICU. This can be interpreted to mean that since the concerned staff feels that he or she lacks adequate training to acquire skills and expertise required to implement the EINC protocol then it would follow that there will be a natural resistance to adopt to new procedures and instead continue to follow established practices which the respondents feel more comfortable in doing.

VI. Conclusions and Implications of the Study

This study provided useful information on the barriers to the regular implementation of EINC protocol that could have an impact to the extent of its implementation in health care institutions, be it the rural health unit, lying-in clinic and even the hospital setting. In line with the foregoing findings, the following

conclusions have been reached: The staffs were generally applying the steps/procedures in the EINC protocol in their respective units/areas however there are barriers to its regular and full implementation. Some of the more significant barriers have been identified in the findings. The leaders of health care institutions must therefore, take the necessary steps to mitigate the effects of these barriers. Such steps will insure that the EINC protocol is religiously followed and implemented.

Assuring the delivery of key evidence-based interventions during childbirth is critical to optimizing care for women and newborns. Thus, the need for a paradigm shift from the prevailing standard procedures into the new EINC protocol cannot be over emphasized. The findings underscore the need for healthcare institutions to strengthen their information drive on EINC which can result to its increased implementation which can in turn lead to improved quality of care delivered by health workers attending to institutional deliveries. This may involve engaging and empowering the staff; providing education on best practices and existing deficiencies; discussing potential barriers and introducing the EINC protocol through focused training; and establishing a mechanism for ongoing monitoring and evaluation.

Although it has provided important information on the sources of EINC knowledge that could influence the extent of its implementation, this study has a number of limitations. Firstly, the study relied on respondents' self-reported data, which is prone to bias. Second, the research method did not include a qualitative component which could have strengthened the study by providing reasons why some things are not done the way they should be done. Another limitation of this study is the sample size. There is no previous statistical correlation of the sample size to any similar study that could have validated the findings as definitive of the state of EINC protocol implementation in private and public hospitals.

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Global Journal of Medical Research: K
Interdisciplinary
Volume 16 Issue 3 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

A Community-based Study on Prevalence and Correlates of Erectile Dysfunction among Kinondoni District Residents, Dar Es Salaam, Tanzania

By Pedro Pallangyo, Paulina Nicholaus, Peter Kisenge, Henry Mayala, Noel Swai & Mohamed Janabi

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Abstract- *Background:* Globally, erectile dysfunction burden (ED) is rising appreciably and it is projected to affect about 332 million men by the year 2025. This rise is attributable to the rising incidence of conditions associated with ED including obesity, diabetes, hypertension, coronary artery disease and depression. We conducted this community-based screening to elucidate on the prevalence of ED and its associated factors among men residing in an urban community in Tanzania.

Methods: We interviewed 441 men aged at least 18 years. Diabetes and hypertension were defined as per the International Diabetes Federation (IDF) and the 7th Report of the Joint National Committee (JNC 7) respectively. The 5-item version of the International Index of Erectile Function (IIEF-5) Scale was used to assess for erectile dysfunction. Multivariate logistic regression analyses were performed to explore the factors associated with ED.

Keywords: *erectile dysfunction, diabetes, hypertension, excess body weight, community-based.*

GJMR-K Classification: *NLMC Code: QV 150*

Strictly as per the compliance and regulations of:

A Community-based Study on Prevalence and Correlates of Erectile Dysfunction among Kinondoni District Residents, Dar Es Salaam, Tanzania

Pedro Pallangyo [α], Paulina Nicholaus [σ], Peter Kisenge [ρ], Henry Mayala [ω], Noel Swai [¥] & Mohamed Janabi [§]

Abstract- Background: Globally, erectile dysfunction burden (ED) is rising appreciably and it is projected to affect about 332 million men by the year 2025. This rise is attributable to the rising incidence of conditions associated with ED including obesity, diabetes, hypertension, coronary artery disease and depression. We conducted this community-based screening to elucidate on the prevalence of ED and its associated factors among men residing in an urban community in Tanzania.

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Results: The mean age was 47.1 years, 57.6% had excess body weight, 8.2% had diabetes and 61.5% had high blood pressure. Overall, 24% (106/441) of men in this study had some form of ED. Participants with age ≥55, positive smoking history, obesity, diabetes and hypertension displayed highest rates of ED in their respective subgroups. However, age≥40 and diabetes were ultimately the strongest factors for ED after multivariate logistic regression analyses, (OR 5.0, 95% CI 2.2-11.2, p<0.001 and OR 5.3, 95% CI 2.2-12.7, p<0.001 respectively).

Conclusion: Erectile dysfunction affects about a quarter of adult men living in urban Tanzania. Old age, obesity, smoking, hypertension and diabetes have the potential to increase the odds of ED up-to 5 times. In view of this, men with diabetes and hypertension should be offered screening services and treatment of ED as an integral component in their management.

Keywords: erectile dysfunction, diabetes, hypertension, excess body weight, community-based.

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Plain English Summary- Erectile dysfunction (ED) is defined as persistent inability to attain and/or maintain an erection sufficient for satisfactory sexual activity. ED is associated with old age and comorbidities including diabetes and hypertension amongst others. The incidence of ED is increasing globally and this is attributed to the aging population and the increase in the incidence of diabetes and hypertension.

We aimed to determine the burden of ED among male residents of Kinondoni district, Dar es Salaam Tanzania. We recruited and interviewed 441 men aged at least 18 years. We utilized the 5-item version of the International Index of Erectile Function (IIEF-5) Scale for erectile dysfunction assessment. We defined diabetes and hypertension according to the International Diabetes Federation and the 7th Report of the Joint National Committee (JNC 7) respectively.

About a quarter of all men had some form of ED. Old age and diabetes were associated with a 5 times increased likelihood for having ED. We concluded that ED is a common problem among men of reproductive age and that in view of this, men with diabetes and hypertension should be offered screening services and treatment of ED as an integral component in their management.

I. Background

Erectile dysfunction (ED) is defined as persistent inability to attain and/or maintain an erection sufficient for satisfactory sexual activity.[1] Despite its benign nature, ED has the potential to impair personal interactions, quality of life and well-being of both patients and their partners.[2-4] The rates of ED increase with age almost always indicating endothelial dysfunction.[5-14] Furthermore, ED is associated with a number of medical conditions or their treatment including diabetes mellitus, hypertension, coronary artery disease and depression.[15-22]

Establishing the burden of ED in the community is challenging and most clinicians lack adequate skills in detecting and/or managing it.[23,24] The reported rates worldwide have a wide variability ranging between 2%

and 90% depending on the age, race, comorbidities, hospital- versus community-based, assessment tool, and geographical location of the population studied.[8,12,25-40] With the rising of comorbidities associated with ED worldwide, it is projected that its incidence will rise appreciably and that by year 2025, 332 million men will have some form of ED.[41] To elucidate on the prevalence of ED and its associated factors in a Tanzanian community we undertook this cross-sectional study among Kinondoni district men.

II. Methods

a) Study Procedures & Definition of Terms

We conducted this community-based cross-sectional screening among men residing in Kinondoni district, Dar es Salaam, Tanzania in January 2016. 441 men of African descent aged at least 18 years were recruited and screened for erectile dysfunction. Participants were consented to participate in the study after they voluntarily came to the screening grounds for an organized general health check-up. Interviewers, mainly clinicians and nurses from the Jakaya Kikwete Cardiac Institute (JKCI) and Mwananyamala District Hospital were recruited and trained to administer the questionnaire and perform anthropometric, blood pressure (BP) and random/fasting blood glucose (RBG/FBG) measurements. Weight and height were measured with standard scales and BMI was calculated by a ratio of weight (in kilograms) to height (in meters) squared. WHO BMI cut-off values were used to define underweight, normal, overweight and obese.[42] Smoking history was sought and participants were categorized as current, past or a never smoker. Diabetes was diagnosed using RBG ≥11.1 mmol/L and/or FBG ≥7 mmol/L.[43] Prediabetes was defined as FBG of 5.6-6.9 mmol/L and/or RBG of 7.8-11.0 mmol/L.[43] Blood pressure was measured by digital BP machines where a systolic blood pressure (SBP) <120 mmHg and a diastolic blood pressure (DBP) <80 mmHg defined normotension. Pre-hypertension was defined by SBP of 120-139 mmHg or DBP of 80-89 mmHg, while SBP ≥140 mmHg or DBP ≥90 mmHg indicated hypertension.[44] The 5-item version of the International Index of Erectile Function (IIEF-5) Scale was used to assess for erectile dysfunction.[45-48]

b) Statistical analysis

Continuous variables are summarized and presented as means (± SD) while categorical variables are displayed as frequencies (percentages). Chi square tests and Student's T-test were used in comparison of categorical and continuous variables respectively. Bivariate analyses were performed to determine factors associated with ED. Significant factors on bivariate analysis were included in a logistic regression model to control for confounders. Odd ratios with 95% confidence intervals and p-values are reported. STATA v.11.0 was used for analysis, significance was set at $p<0.05$ and all analyses were two-sided.

III. Results

Socio-demographic and clinical characteristics of 441 study participants is displayed in Table 1. The mean age was 47.1 (±15.4) years and 63.7% were aged 40 years and above. 53.8% had completed primary school, 71% were married, and 14% ever smoked. The mean BMI was 26.6 (±5.3) kg/m^2 and 57.6% of individuals had excess body weight (i.e. BMI ≥25). The mean blood glucose level was 6.1 (±2.2) mmol/L and 8.2% had diabetes. The mean SBP and DBP were 146 (±32) mmHg and 91 (±20) mmHg respectively and 61.5% had hypertension.

Overall, 24% (106/441) of men in this study had some form of ED. Prevalence of ED increased with increase in age and weight i.e. 37% and 32% of those aged ≥55 and obese respectively had ED compared to 10.6% and 18.1% among those aged 18-39 years and normal BMI, ($p<0.001$ and $p<0.01$ respectively), Figure 1. Men with a positive smoking history had a 40% increased likelihood for ED compared to never smokers, (OR 1.4, 95%CI 0.7-2.5, $p>0.05$). 63% of men with diabetes had ED compared to 30.4% with prediabetes and 19.1% with normal blood glucose, ($p<0.01$ and $p<0.001$ respectively). Participants with prehypertension (20.2%) and hypertension (29.3%) had significantly higher ED rates compared to normotensive persons (8.3%), $p<0.05$ and $p<0.001$ respectively.

Six variables including age, BMI, physical activity, smoking, hypertension, and diabetes status underwent bivariate analyses to assess if they have associations with ED. Four variables including age, BMI, hypertension and diabetes status revealed significant associations and these were added in a logistic regression model for further analysis. Table 2 displays results of multivariate logistic regression analysis. Men aged 40 years and above displayed a 5 times increased likelihood of having ED compared to those younger than 40 years, (OR 5.0, 95% CI 2.2-11.2, $p<0.001$). Likewise, diabetes was associated with a 5 times increased odds of having ED, (OR 5.3, 95% CI 2.2-12.7, $p<0.001$).

IV. Discussion

Nearly a quarter of men in this present study had ED. Our findings are close to a Chinese study by Bai et al which produced a prevalence of 28.3%.[49] A wide variability in the prevalence of ED from 13.2%[50] in Egypt to 51.3[25] in Singapore observed among studies[12,25,42,51] is largely a result of variabilities in population characteristics and tools used for ED assessment among studies. Old age has been consistently shown to be a strong predictor of ED.[25] In this study, the rate of ED among participants aged 55 and above was 3 times compared to those in the age

group 18-39 years. These findings echo the results of a landmark Massachusetts Male Aging Study[25] among others.[2,18,30] Aging is associated with comorbidities resulting into atherosclerosis and ultimately vascular dysfunction with ED as one of the manifestations.[52]

Obesity was significantly associated with ED on bivariate analyses in this study. Such findings are in unison with Moreira[12] et al study in which obesity proved to be a significant predictor on bivariate analysis but lost its significance after multivariate analysis. A study by Chung et al[53] showed that obesity is not an underlying factor for ED per se, but it does increase the risk through development of chronic vascular disease. Numerous studies[12,52,54-57] have suggested a dose dependent relationship between smoking and ED. Ever smokers in this study had a 40% increased likelihood for ED compared to never smokers. A systematic review by Cao[57] et al found that ED was increased by 20% and 51% among past- and current-smokers respectively. Apart from its potential to cause direct toxic effects on the vascular endothelium, smoking is linked to ED through its potential to mediate systemic changes including hypercoagulability, platelet aggregation and thromboxane-prostacyclin imbalance.[58]

Diabetes is a well-established factor for ED. Participants with diabetes in our study had a 5 times increased odds for ED (OR 5.3) compared to diabetes-free persons. These current results have replicated the findings of a study by Zedan[59] et al among Egyptian men which found an odds of 5.4. Other studies have consistently produced higher ED rates among diabetics compared to diabetes-free persons ranging between 35% and 75%.[8,11,12,25,41,60-65] Diabetes is a risk factor for ED through its potential for causing autonomic neuropathy, gonadal dysfunction, and vascular and neurogenic impairment of penile smooth muscle.[61,66,67] Hypertensive participants had a tripled likelihood of having ED compared to their normotensive counterparts ($p<0.001$), however the significance was lost after multivariate logistic analyses. Hypertension and some antihypertensive drugs have been shown to increase the risk for ED.[17,30,35,68] High blood pressure is known to interfere with blood flow to the corpora cavernosa by causing narrowing and loss of elasticity of arteries thus resulting to ED.[69]

Other factors including heavy alcohol consumption,[2,54,70] depression,[18,71-73] and low economic status[18,74,75] have been associated with increased risk for ED but were beyond the scope of this study. Further studies on ED in this area could investigate on their association with ED among Tanzanian men.

This study has several strengths including; (i) the use of an internationally recognized tool for assessing ED that will make comparison with other studies feasible, (ii) the simultaneous assessment of obesity, diabetes and hypertension allowed us to confirm the presence of these risk factors rather than relying on participants' self-report. This study has some limitations as well, including; (i) the generalizability of our findings may be limited because the men screened in this study voluntarily came for screening and this might reflect a selected population of those either with a very good health seeking behavior or those having some health concerns necessitating medical help, (ii) Our assessment of ED was through interviews and we are aware that conditions like ED are highly associated with social stigmas. As a result of this, it is likely that ED was underreported by study participants, (iii) we made diagnoses of hypertension and diabetes based on a single point measurement of BP and RBG/FBG, thus our diabetes and hypertension rates might be overestimated, and (iv) our study was prone to several forms of bias including selection bias and non-differential bias, inevitably due to its cross-sectional nature.

V. Conclusions

Several conclusions can be drawn from this present study: (i) ED affects one in four men over 18 years in urban Tanzania, (ii) age and diabetes mellitus are the strongest factors associated with ED, (iii) the high rates of ED among hypertensive and diabetic patients suggest that patients with such comorbidities should be screened for ED, (iv) with the increasing incidence of obesity, hypertension, diabetes and an aging population, ED may become a significant public health problem. In view of these findings: (i) services for diagnosis and treatment of ED should be readily available to men in developing nations, and (ii) health programs should be designed in developing nations to educate and empower individuals on healthy eating, physical activeness and health seeking behavior.

Declarations

Ethical Approval and Consent to Participate

Ethical clearance was obtained from the Unit of Research of the Jakaya Kikwete Cardiac Institute (JKCI). Permission to conduct the study was granted by the Office of the Kinondoni District Commissioner. All participating men gave informed consent.

Availability of Data and Materials

The final version of data set supporting the findings of this paper may be found in the Jakaya Kikwete Cardiac Institute website (www.jkci.or.tz). The corresponding author will be more than willing to email the data set to the editorial committee whenever it's needed.

Conflict of interest

The authors declare no conflict of interest to disclose.

Funding

This study was funded by the Office of the District Commissioner for Kinondoni Municipal. The funder played no role in the design, analysis and

manuscript development of this research. The authors assume the responsibility for this work.

Authors Contributions

MJ, PK, and PP made contributions in study designing. PP and PN performed all data management and manuscript writing. The initial draft was revised by PK, HM, NS and MJ. All authors contributed to and approved the final manuscript version.

VI. Acknowledgement

We are grateful to clinicians and nurses of the Jakaya Kikwete Cardiac Institute and Mwananyamala hospital for their dedication towards this study. The authors are indebted to Hon. Regional Commissioner Paul Makonda for the technical and financial support.

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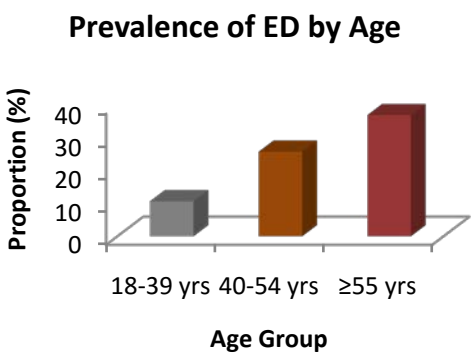
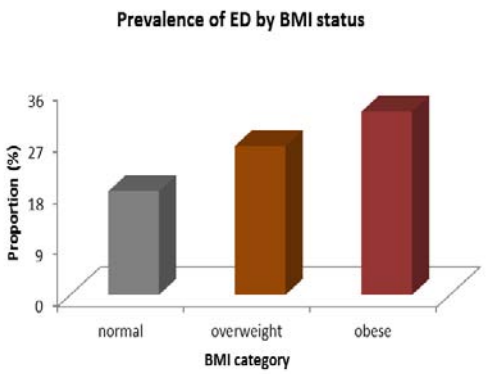
Illustrations and Figures





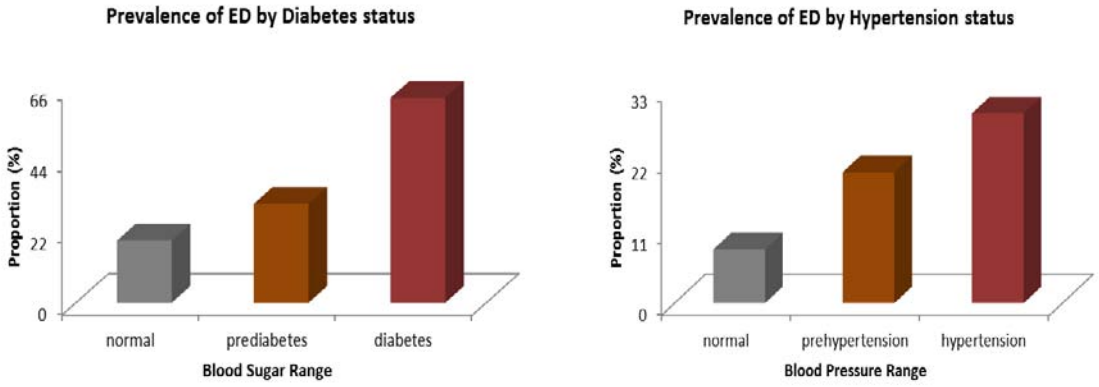


Figure 1 : Prevalence of ED by Age, BMI, Diabetes and Hypertension status

Tables and Captions

Table 1 : Socio-Demographic & Clinical Characteristics of Study Participants (N = 441)

Characteristic	n (%)
Age groups	
18-39	160 (36.3%)
40-54	135 (30.6%)
≥55	146 (33.1%)
Education level	
None	12 (02.7%)
Primary	237 (53.8%)
Secondary	139 (31.5%)
University	53 (12.0%)
Marital status	
Single	95 (21.6%)
Married	313 (71.0%)
Divorced	24 (05.4%)
Widowed	9 (02.0%)
Smoking status	
Non-smoker	379 (86.0%)
Current smoker	9 (02.0%)
Past smoker	53 (12.0%)
BMI status	
Underweight	14 (03.2%)
Normal	173 (39.2%)
Overweight	154 (35.0%)
Obese	100 (22.6%)
Blood Sugar Range	
Normal	344 (77.9%)
Prediabetes	61 (13.9%)
Diabetes	36 (08.2%)
Blood Pressure Range	
Normal	60 (13.6%)
Prehypertension	110 (24.9%)
Hypertension	271 (61.5%)

Table 2 : Multivariate Logistic Regression Analysis of Factors Associated with ED

Test group	Comparative group	OR	95% CI	P-value
Age ≥40	Age<40	5.0	2.2-11.2	**<0.001**
BMI ≥30	BMI <30	1.4	0.7-2.5	0.306
Hypertensive	Non-hypertensive	1.2	0.6-2.3	0.541
Diabetic	Non-diabetic	5.3	2.2-12.7	**<0.001**

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Global Journal of Medical Research: K
Interdisciplinary
Volume 16 Issue 3 Version 1.0 Year 2016
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Nightmares (Bangungut) is the Leading Cause of Sudden Unexplained Nocturnal Death among Adults (SUNDS), its Risk Factors, and Solution. A Review of Literature

By Dr. Othman Alfleesy
Aden University, Yemen

Abstract- *Background:* Nightmare(NM) and its various names is a well known phenomena In different societies. The synonyms (Bangungut) in Philippine is colloquially and culturally used to describe this phenomenon (NM). This enigma is called Sudden Unexplained Nocturnal Death Among Adults (SUNDS) in USA, (pok kuri) in Japan, in Arab countries its name is gutham or khapoos. There is a strong a link between Bangungut (NM) and SUNDS, but SUNDS scientifically as a medical term does not mean nightmare or Bangungut .This paper focused on the enigma of Nightmare, and explores the risk factors which triggers NM (Bangungut) which might lead to death (SUNDS).

Objectives:

1. To clarify (explain), the exact meaning of: Nightmare, Bangungut, SUNDS.
2. To determine the risk factors of NM (Bangungut), which might lead to death (SUNDS).
3. To explain the death mechanism of nightmare (Bangungot).
4. To postulate the mechanism, and criteria for diagnosis of NM (Bangungut).

Keywords: *nightmare, bangungut, SUNDS, heavy meal. right - side sleeping position, sleep (limb) para lysis, asphyxia. near-miss SUNDS, vagal stimulation, ALTE, SIDS.*

GJMR-K Classification: *NLMC Code: W 820*

Strictly as per the compliance and regulations of:

Nightmares (Bangungut) is the Leading Cause of Sudden Unexplained Nocturnal Death among Adults (SUNDS), its Risk Factors, and Solution. A Review of Literature

Dr. Othman Alfleesy

Abstract- Background: Nightmare(NM) and its various names is a well known phenomena In different societies. The synonyms (Bangungut) in Philippine is colloquially and culturally used to describe this phenomenon (NM). This enigma is called Sudden Unexplained Nocturnal Death Among Adults (SUNDS) in USA, (pok kuri) in Japan, in Arab countries its name is gutham or khapoos. There is a strong a link between Bangungut (NM) and SUNDS, but SUNDS scientifically as a medical term does not mean nightmare or Bangungut .This paper focused on the enigma of Nightmare, and explores the risk factors which triggers NM (Bangungut) which might lead to death (SUNDS).

Objectives:

1. To clarify (explain), the exact meaning of: Nightmare, Bangungut, SUNDS.
2. To determine the risk factors of NM (Bangungut), which might lead to death (SUNDS).
3. To explain the death mechanism of nightmare (Bangungot).
4. To postulate the mechanism, and criteria for diagnosis of NM (Bangungut).

Methods: The author summarized what is known about Nightmare (Bangungut) i.e. the autopsy findings, the clinical pictures, the mechanism, included in the previous studies and researches in medical journals. The researches were gained randomly according to their availability or after searching data base in website.etc., classified according to the aim of the study, and put in simple tables for comparison.

Results: The review reveals confusing in concern with the term (SUNDS).This study exposed the risk factors, the mechanism, and the solutions as they proposed by the investigators and author for solution. Surprisingly the sleep position have not caught the attention of medical researchers as a main risk factor for this disorder.

Conclusion: The study proposed the elements for definition and the diagnostic features (criteria) for nightmares, the risk factors and the mechanism have mentioned too. Nightmare, Bangungut are the same phenomenon. The term SUNDS is not a true synonym for NM, but it is the fatal end of Some Nightmare cases.

Keywords: nightmare, bangungut, SUNDS, heavy meal. right - side sleeping position, sleep (limb) paralysis, asphyxia. near-miss SUNDS, vagal stimulation, ALTE, SIDS.

Abbreviations: SUNDS: Sudden Unexplained Nocturnal Death among Adults.

I. Introduction

a) Nightmare and its various names is a well known phenomena

In different societies. Later on, this enigma is called SUNDS in USA in 1970, by centers for disease control (CDC), (Bangungut) in Philippine, (pok kuri) in Japan. in arab countries this phenomenon is called gutham or khapoos. Not all synonyms, given to this enigma indicated (colloquially) or literally the same meaning for NM or Bangungut, as for example SUNDS. Bangungut, is the term originated from the Tagalog word Bangungut: Bangun: to rise, ungul: to moan. which is the same meaning for nightmare. Traditionally this disorder is well known to lay people in the world, each society has its own colloquial term, but Nightmare is the common and the dominant term. Folklore of causation about bangungut exists among the popular with different stories. That means the sleeper might still a live (survive) after suffering this condition.

The victim appears to be subjected to violent, terrifying dreams from which the sleeper might be awakened or might lead to death(SUNDS), It is happened every where in the world .This enigma (disorder), was firstly recognized in manila in 1915 and was described and published in medical publication two years later[9].

Because of the documentation and the advancement in the field of pathology, the existing researches have focused on autopsy findings seeking an explanation for nightmare. The pathologists had autopsied the cases for diagnosis the cause of death but with no result. The author believed that There might be a reasonable translation- by CDC- for this term: NM, or Bangungut to be changed to SUNDS, because SUNDS is an other term with different meaning, and this was the starting point of confusion. SUNDS includes a dead case of NM, while NM or bangungut still alive (survive). Clearly, there is a strong link between

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nightmare and SUNDS. But SUNDS is the fatal end of NM.

The annual incidence of SUNDS has been reported to be as high as 43 per 100,000 people aged 20–40 years in the Philippines and 38 per 100,000 people aged 20–49 years in Thailand. In Southern China, the incidence is about 1 per 100,000 people. During 1981-1982 the annual rate in th U.S was remarkably high: 92/100,000 among Laotian-, 82/100, 000 among other Laotian ethnic group and 59/100,000 among Cambodians.12

II. Historical Background

a) What is known about NM, Bangungut, SUNDS?.

The term Bangungut originated from the Tagalog word meaning "to rise and moan in sleep".[4,9,15] It is also the Tagalog word for nightmare.

The word "nightmare" derives from the Old English "mare", a mythological demon or goblin who torments others with frightening dreams. Or referred to a mare a female spirit that was believed to suffocate the sleeping victim. Subsequently, the prefix "night-" was added to stress the dream-aspect. The phenomenon of nightmare (Bangungut) was described in piles of literature in different societies for a long time. Nightmare is present since the creation of human being and their living on the earth surface. Nightmare is a part of traditions to all humankinds. It is totally wrong and unlogic to restrict Nightmare to some societies only. NM is happening to some individuals every where in the world The influential Greek physician Galen examined the causation of the nightmares during the second century AD, and a description of the experience appears in a Chinese book on dreams dated to as early as 400 BC. Descriptions of the "nightmare", however, only appear in English in the later medieval period. One fourteenth-century manuscript describes, for example, how the "night-mare" lay on top of people at night (Kuhn and Reidy, 1975).

b) Definition

By reviewing a number of references and researches the following definitions were included. Nightmares refer to a terrifying terror to some individual in all ages, after having eaten a heavy meal and falling sleep

III. Clinical Manifestation

Aponte stated: The clinical manifestation are remarkably constant and are repeated time and time again. The subject, healthy, young, goes to bed, after having eaten a heavy meals. After he has fallen asleep he is seen to move about in bed in most agitated manner, groaning, yelling and coughing often with frothy fluid exuding from mouth. Attempts to awaken him are unsuccessful, and dies within very short time sometimes he is found dead in bed the following morning9.

a) Autopsy findings

Aponte stated the pathologic changes were not specifics and in general were those of acute circulatory collapse. the pathologists found : cyanosis of lips, congestion of internal organs, Petechial hemorrhages,- acute cardiac dilatation. pulmonary edema acute pancreatitis, Cerebral edema, The stomach is distended and filled with ingested food[9].

b) Theories

Numerous of theories, have been proposed to explain the cause and mechanism of death. The "eating-before-sleeping" theory, the cardiac theory, the toxic theory, and the acute pancreatitis theory. heredity, nutrition, toxins, chemical, pollution, last is the brugada disease.

c) What is unknown about Bangungut (NM) and SUNDS?.

Despite the huge number of researches studying this enigma, the researchers did not determine the risk factors mainly Non Right-side sleeping position. Mechanism of death were absent from their discussions too. That is why they failed to propose the mechanism and to give the solution.

d) Objectives

1. To clarify (explain), the exact meaning of Nightmare, Bangungut, SUNDS, as it is included in articles, references, traditions.
2. To determine the risk factors for NM (Bangungut), which might lead to death (SUNDS).
3. To explain the mechanism of death, in this disorder.
4. To postulate the mechanism, and criteria for diagnosis of NM.

IV. Material and Methods

The author summarized what is known about Nightmare (Bangungut), SUNDS, including : the autopsy findings, the clinical pictures, included in the previous studies. The researches were gained randomly according to their availability or after searching data base in websit. the clinical data and autopsy findings on victims, were categorized and tabulated with in a simple tables for comparison. This study is providing a rich comparison of risk factors, clinical pictures and autopsy findings which were bsent from all previous studies.

V. Results

Table I : shows the risk factors and clinical manifestations (features) in sufferers from Nightmare (Bangungut).

RISK FACTORS and CLINICAL MANIFESTATIONS					
Sudden unexplained nocturnal death among adults(SUNDS)	Near-miss SUNDS	Night mare(Bangungut)	Age	adult	a
			condition	Healthy	b
			eating food before sleep	heavy meal	c
			sleeping position	non Right-side sleeping position	d
			asphyxia	occurs	e
			Sleep (limb) paralysis	occurs	f
			terrifying dreams of NM	occurs	g
			Groaning Moaning	occurs	h
			death during sleep	escape death survive)(	i
			death during sleep	Occurs	j
			autopsy findings	signs of asphyxia	k

NM= a-h
Near-miss SUNDS=a-i
SUNDS=a-k(except) i

Nightmare=Bangungut=Pok kuri=Ghutham(Khapoos).

Near-miss SUNDS: Those who suffered NM, but escaping death (Survive).

SUNDS= nightmare sufferers ending with death (NM dead cases).

The main clinical manifestation (features) which constitutes Bangungut or Nightmare are: suffocation. Terrifying dreams, limb paralysis.

Table II : shows autopsy findings in SUNDS (nightmare dead cases).

Phenomenon	Autopsy findings			
	Petechial Hemorrhages (ITH)	Pulmonary edema. congestion of organs	Food in stomach	Food, frothy fluid in air passages
SUNDS	Found	Found	Found	Found

Table (II) presents the autopsy findings for SUNDS. The forensic pathologists found in SUNDS the following: Intrathoracic hemorrhages (I.T.H), pulmonary edema, food in stomach, frothy fluid exudes from the mouth, nothing more.

Table III : Shows similarities between SUNDS and SIDS.

Disorder	Age	Sleep position	Eating Food	Death	Obstruct. Asphyxia	Autopsy findings
SIDS	Infant, child	Non Right side	Having Food	occurs	Suffers	Signs of asphyxia
SUNDS	adult	Non Right side	Heavy meal	occurs	suffers	Signs of asphyxia

Table III shows that the risk factors and clinical manifestations are the same. The intensity of manifestations may differ according to the age.

VI. Discussion

The author discovered that the existing data in the previous studies are conflicting.

To put research concerned with NM-Bangungut. Into perspective, it is essential to know the nature of the problem in order to solve it. Here there were no obvious clues for researchers to deal with. The enigma of NM (Bangungut) or SUNDS has frustrated researchers for too long. The researchers have not delineate the differences between NM and SUNDS.

The scientists failed to determine its causes and mechanism because of the, misconception and confusion of the term NM, SUNDS.

The results is consistent with previous studies of the author[14], these results suggested that Right- side position sleeper are in a different physiological state which does not resemble other positions(prone, supine, left side sleeping position).The persons who slept on Right-side posture were not have been reported to experience NM or SUNDS. Results of autopsies have not identified a cause of death since the first autopsy. By this study the author found the following points: Clinical manifestations are remarkably constant since the first description of Aponte[9] and Majoska[20].

Pathological changes are the same since the first autopsy. There is confusing in considering SUNDS and Nightmare (Bangungut) as the same meaning, as the CDC declared and applied this name. The major finding of our study is the other risk factor: sleep position (Non Right-side), which was totally absent in all previous discussion.

No any study before mentioned the Non Right-side sleeping position as a risk factors, and the Right-side sleeping position as a safe position, while there was a consensus about the heavy meal as a risk factors. Aponte, is the pathologist who described and discussed all points, which the scientists up-to-date repeat the same basic information of APONTE there are many other individuals who suffered from such enigma (Bangungot) but succeeded to escape and to survive, by intervening or by auto-arousal luck and chance.

a) Synonyms

Bangungut (NM) is not equated to the Sudden Unexplained Death Syndrome (SUNDS), which is (SUNDS) characterized as the abrupt death of an otherwise healthy person, for no apparent reason or explanation (Gervacio-Domingo, et al., 2007)[2].

The term SUNDS itself developed through an attempt to provide a name- by CDC- for this clinical disorder (enigma) without basing on its original sense. unfortunately the application of the term SUNDS has been increasingly confusing when we utilize it as a synonym of NM or Bangungut, or when we deal with it as an other enigma. In fact the term SUNDS generates dissent among researchers and led to confusion and misinterpretation to all investigators.

The term SUNDS, was far away from its original sense (bangungut), nightmare). How could the researchers call this enigma Bangungut(NM) and SUNDS in the same time.? How could they equate between them?.

SUNDS is not – literally or scientifically- a term or a synonym (identical) for Bangungut or Nightmare as CDC declared. In daily colloquial use , bangungut often refers to nightmares in general , and do not necessarily end fatally.

b) Defnition

The term “bangungot” is not an unfamiliar term to Filipinos. It is colloquially and culturally used to describe the combination of nightmares and immobility during sleep (Tan, 2000)[1].

By reviewing a number of references and researches the following definitions were included. Nightmare refer to a terrifying terror to some individual in all ages, after having eaten a heavy meal and falling sleep, other scientists added the following points to the previous definition as follows: usually characterized by a feeling of suffocation and helpless[16]. paralysis.

The classical one associated with helpless paralysis, and happens in later half of sleep[18]

- Is a fright reaction during sleep. The child awakens in terror from a dream usually characterized by a feeling of suffocation and helpless16.
- It is a dream in which the sleeper feels that something is kneeling on his chest. Kolb stated : nightmares occur physiologically during REM sleep and during later part of the sleep period17.
- The sufferer cannot move, talk, or shout, even through trying to do so. Partially awake and also partially somnolent, he attracts attentions to himself by moaning. Some try to break the paralytic attack by forcing a leg or arm off the bed but they could not. A touch generally leads to arousal. It is clear that it could happen to all ages.

So, on the ground of this study and previous definitions, the author would emphasized that the NM definition must have five elements (criteria) to be valid and diagnostic. two of these elements are the primary risk factors which are:1- eating a heavy meal. 2- lying on non Rt side position (prone, supine, left side position) which trigger nightmare (Bangungut). The other elements for the definition are the main clinical characteristics of the sleeper during suffering from NM, These are:1- Nightmares terrifying dreams(2)- The sleeper must suffer from sleep(Limb) paralysis.(3)- Suffering of Suffocation or asphyxia. All these support (diagnose) that the sleeper was having Nightmare or Bangungut. Kavanau (2000) suggests that the frightening images that one sees during a bad dream are caused by post-traumatic stress related events7.,but this is not concordant with current NM concept. Post-traumatic stress disease has no any relations to NM at all.

Night mare is a condition results from a respiratory failure and suffocation results from a combination of the main two risk factors: eating heavy meal and lying on non Right-side sleeping position (prone, or back or left side), it reflects the state the sufferer reached the climax and his difficult situation in a terrifying dream, as a result of obstructive asphyxia and respiratory failure.

Its main feature is suffocation (asphyxia), and limb (body) paralysis associated with non-logic, fragmentary pictures, which are the responses to your stage of suffocation, before you either wakeup or died.

c) Clinical Manifestations

Clinical picture invariably follows a well defined pattern, mostly in all studies.

Aponte stated: The clinical manifestation are constant and repeated time and time again. The subject, healthy, young, goes to bed, after having eaten a heavy meals. After he has fallen asleep he is seen to move about in bed in most agitated manner, groaning, yelling and coughing often with frothy fluid exuding from mouth. Attempts to awaken him are unsuccessful, and dies within very short time sometimes he is found dead in bed the following morning. Witnesses were alerted or awakened by abnormal respiratory sounds and /or by a brief groan, gurgling tonic rigidity. Witnesses interpreting the terminal groans in death as sign of terror supported the popular notion that deaths resulted from terrifying dreams. The sleeper is suffering an experience from nightmare in the form of limb paralysis, Difficult yelling, moving due to suffocation.

There is a consensus in all previous and contemporary researches that heavy meal is a risk factor. Terrifying dreams, moaning or groaning, sleep (limb) paralysis, suffocation, conscious but not awake, paralyzed respiration. etc. The author emphasized that sleep paralysis is a feature of Night mare not a separate enigma or phenomenon as some scientists and psychiatrists stated.

Terrillon, et al. (2001) found that sleep paralysis involved out of body experiences 6 most of the investigators consider sleep paralysis as a separate phenomenon not a part of NM. This is misinterpretation, and misunderstanding of the elements, criteria for Nightmare

d) Autopsy Findings-Pathological Changes

The earliest investigations were based on the performance of an autopsy upon the bodies. One of the earliest investigation based on autopsies was that by Majoska[20] and Aponte[9]. After that most- if not all – information of the existing researches and contemporary studies were extracted from the study of Aponte. Aponte stated: the pathologic changes Were not specifics and in general were those of acute circulatory collapse. the pathologists found : cyanosis of lips, congestion of internal organs, Petechial hemorrhages,- acute cardiac dilatation. pulmonary edema acute pancreatitis, Cerebral edema, The stomach is distended and filled with ingested food.

In concern with pathological changes, all autopsy findings which had been documented for about century are still the same and no thing new Surprising that all findings for infants are the same(SIDS) except acute pancreatitis.

e) Near-Miss SUNDS

It is well-known that some of the nightmare cases which is going to die. But while they were suffering from the process of dying, it may be prevented either by external factor (mechanical interference (touch), I can not find an explanation, but it is God's care for this auto- arousal and may escaping death and survived, they called near-miss SUNDS. Dr Otto, and others mentioned the term near-miss SUNDS after reported three cases of near-miss SUNDS13.

The process of death in Nightmare (SUNDS) or escaping death (near-miss SUNDS)

Adult: Non right- side sleeping position +heavy meal clinical features (nightmare terror dream, sleep paralysis represent asphyxia or dying process) stopped by a timely mechanical intervening (touch) escaping death (near-miss SUNDS or survival Nightmare case).

The same Adult: Non right- side sleeping position +heavy meal clinical features (nightmare terror dream, sleep (limb) paralysis represent asphyxia or dying process) no timely mechanical intervening (no touch) death occurs (SUNDS).

f) Sleeping Position

Narrated Al-Bara' ibn 'Azib (may Allah be pleased with him), the prophet Mohamed (Allah's Peace Be Upon Him "PBUH") said to me, "Whenever you go to bed perform ablution like that for the prayer , lie on your Right-side and then say, 'O Allah, I surrender my soul to You and I turn my face to You and I entrust my affair to You and I seek Your support with hope and fear of You. There is no refuge from You but to You. I have believed in Your Book (the Qur'an) which You sent down and in Your Prophet Whom You sent. Then if you die on that very night you will die with faith (i.e in the religion of islam). Let the aforesaid be your last utterance (before sleep).

(Al-Bukhari: 814)15

Tradition, religious, and social circumstances usually dictate which sleep position is selected by the individual?. For both adults and infants there is a position preferred for different societies. That is why prone position was the preferred sleep position for infants in USA which led to a huge number of deaths among infants before changing to back position, and also it is a preferred sleeping position in USA for adults.

The author asked the researchers all over the world : What about the nearly forgotten Sleep position in the matter of NM(Bangungut)?.

There has been no research and discussion in regard to sleep position as a main risk factor in this enigma (NM). The sleeping position did not receive the attention of researchers at all through all their studies. In

the way , no studies are known to have examined the Rt-side sleeping position.

Recent German research confirms that both sleep paralysis and related hallucinations predominantly occur in a supine sleeping position (Dahmen and Kasten, 2001).

No one thought about the association between NM (Bangungut) and the Non Right-side sleeping positions. And no advice was recommended for the safe position. The prone / supine sleeping positions have been found to be associated with an increasing of airflow resistance, lowering the arousal threshold and the possibility of mechanical occlusion of the upper respiratory passage.

A link between NM and SUNDS has been noted in much of the literature, but due to misinterpretation of the nature of this disorder the scientists considered them as two separate entities. That is why they failed to answer.

g) Risk Factors

There is consensus that heavy meal is a risk factor and this study added other major risk factors the sleep positions (prone, supine or left side) are associated with SUNDS.

The study identified two essential risk factors for NM (Bangungut) or SUNDS. The risk of NM and SUNDS is high when individual sleep on their non-Right-side sleeping position.

There is a causal link established between NM – SUNDS (NM deaths).

A challenging question was put by scientists stated : who could identify the trigger for NM which results in instantaneous death?. The data to answer this question(Risk factors) is available. The risk factors for NM are;-1 - heavy meal. Eating a heavy meal and falling asleep is one of the main risk factors for NM. A hungry person never suffer from NM whatever his sleeping position.

2) The second risk factor is: sleep position (Non Right-side sleeping position).The author concluded in his research14. That sleeping on non Right- side position is an other risk factor for NM. Both risk factors must be together in order might to playing a role as triggers and, a potential stimulus for nightmare14 .

h) Mechanism

The mechanism of death in Nightmares (Bangungut), SUNDS was unknown. some studies have suggested a role for suffocation (asphyxia) associated with supine sleeping position due to failure of respiratory control mechanism. death may occur if this mechanism continues to reach a climax point, then either death or escaping death and survive.

The author concluded that, there is only a single mechanism for NM and SUNDS. According to over distension of the stomach by recently ingested food and due to pressure upward upon the diaphragm, this interferes with cardiac and pulmonary function, both directly and though a vagal reflex mechanism.

Suffering from respiratory paralysis and limb (body) paralysis suggested that death is due to NM. During sleeping intercostalis muscle do not substantially contribute to inspiratory effort and the pharyngeal dilator are less effective as a result the obstruction hypoxia often worsen more in sleeping. Generally the other factors which contribute to nightmares death are:

=Obstruction of the upper airway-by the back of the large and muscular tongue falling posteriorly into the hollow of a soft yielding pharynx -in sleep- may obstruct the airway and even worsen as the persons inspires, thus enhancing negative pressure below the block. this led to stuck of tongue.

=Negative esophageal pressure is higher in supine / prone positions.

=It is well known that hypoxia, stimulates the vagal inhibition.

i) Theories

Clearly, there is a wide range of opinions in how to determine what is SUNDS, NM and their nature.

Researchers have focused on finding an explanation for Nightmare (Bangungut), SUNDS, but they failed. During review of studies Numerous of theories, hypotheses, have been proposed to explain the cause and mechanism of death due to NM. Nolasco (1957) proposes four theories on the causes of bangungot: The "eating-before-sleeping" theory, the cardiac theory, the toxic theory, and the acute pancreatitis theory[3].

In general the proposed theories included in: heredity, nutrition, toxins, chemical, pollution. There was an objection against the theory of acute pancreatitis as a trigger mechanism because it does not explain this sequence of events.

Gaw, et al. (2011) suggested that SUNDS is identical to the Brugada syndrome- An allelic disease that ends in sudden cardiac death. Carandag (2006) believes otherwise[8]. All previuos theories were forwarded with no success. Because they were unconvincing, unlogic or unsatisfactory, they have been criticized and finally discarded.

One of the reseachers stated: It would be unwise, therefore, to draw any conclusions about the relationship between Brugada and the nightmare.# cardiac etiology with or without avitaminosis was unconvincing theory. In fact the theory of eating before sleeping constitutes half theory (one risk factor). The other half is the sleeping position.

VII. Conclusion

The conclusion that the author drew from this revision on Nightmare (Bangungut) are the following:

1. The study supported the previous research of the author which determined the heavy meal and

sleeping on non Right-side position as triggers for NM.[14].

2. The main clinical manifestation which constitutes the diagnosing features of nightmare (Bangungut)-criteria- were: a- asphyxia (suffocation).b- sleep paralysis (limb paralysis).c-terrifying dreams of nightmare.
3. The two risk factors: heavy meal and non Right side sleeping position might lead the individual to suffer from Nightmare. The three cardinal clinical manifestation which indicated this suffering are: suffocation (asphyxia), NM terrifying dream and sleep (limb) paralysis. These symptoms must be found all together for diagnosing NM.
4. These risk factors may lead to NM, but not all those having these risk factors must suffer from NM. and without these two risk factors the nightmare would not occur.
5. Nightmare doe not necessarily end fatally.
6. For those who were suffering from nightmare and ending with death we can apply the CDC term (SUNDS)
7. If those who were suffering from nightmare escaping from death (survive) we call them near-miss SUNDS[13].
8. Sleep paralysis constitutes one of the main three clinical symptoms for diagnosing NM.
9. You have to differentiate between nightmare dream (terrifying dream) and other night terror or night frightening. As night frightening (night terror) may occur in any position including Right-side position, in a hungery individual and in a full stomach but it must not have limb paralysis and might or might not wake up(an arousal). Its dream components is logic, it may occurs throughout sleep, while nightmare terror is not logic and fragmented pictures and it occurs in 1-3 hours after sleep.
10. Nightmare never takes place on Right-side sleeping position, or in those with empty stomach (hungery).
11. Nightmare happens to all ages but every age has its expressions and reflections.
12. Near- miss SUNDS in adults is equated to ALTE in infants, and SUNDS among adults is equated to SIDS in infants, the difference only is the age and they have nearly the same mechanism.
13. Nightmare (Bangungut) is a universal (for all). There is no relation between NM and any other previous theories or diseases mentioned by pathologists or researchers throughout the history of studying this enigma. for example : Buguda syndrome, acute pancreatitis. Simply, because when you said : I caught the disease as a cause of death you must drop the meaning of NM immediately. NM is mechanical and positional death.
14. With no doubt, there is strong link between NM and SUNDS because SUNDS is the NM cases ended with death. But SUNDS is not a synonym of NM, or Bangungut and does not equated to them. As this term far from the original meaning of NM and Bangungut.
15. Right-side sleeping position and light meal will protect an individual from NM 100%.as it is a safe sleeping position
16. Post-traumatic stress is not an expressive term leading to NM as the researches informed. it has no relation to NM.
17. Heavy meal and non Rt side sleeping position were more strongly have a role as a triggers for NM (Bangungut).and may lead to SUNDS.
18. There were no comparable studies in all previous researches and studies- in concern to NM , SUNDS.

Alfleesy Hypothesis: The Right side sleeping position hypothesis

The author concludes that the current information, facts, and knowledge resulted in this study established the validity on which the author suggested his hypothesis. Why Rt side sleeping position is safe?, and why are other non Right-side sleeping positions are danger?.

It is well known in –scientifically- in all studies that:

1. The increased collapsibility in obstructive sleep asphyxia can be caused by an anatomical narrow pharynx, in non Rt side position.
2. The Right-side sleeping position can have a protective function by. preventing the tongue from occluding the airway when the genioglossus muscle is hypnotic. While occulosion happen in non rt.
3. The prone / supine sleeping positions have been found to be associated with an increasing of airflow resistance, lowering the arousal threshold and the possibility of mechanical occlusion of the upper respiratory passage.1,8,16.
4. Laying on Right side will ensure smooth breathing and lowering the resistance to breathing.
5. The liver in the right side of the body constitutes the base on which other organs lay down directly or indirectly in this position as it is the heaviest organ of the body.
6. Laying on right side position permits to establish a suitable direction to the stomach with its content of food that facilitates a smooth breathing.

So in an effort to solve this controversial problems the author wishes to put forward his right side sleeping position hypothesis to prevent NM, Bangungut, SUNDS, among adults as follow : If an individual laying for sleeping on right side position after having a light meal, then, NM and SUNDS would be prevented.

The author believes that the mechanism of death is occurring mainly by mechanical obstructive asphyxia (hypoxia) which may end by stimulating vagal inhibition.

Surprisingly that no scientists or physician gave advice to adults for this concern while they were in need for bthis advice more than adults.

The absence of death mechanism for SUNDS and the other safe Right-side sleeping position support my hypothesis.

VIII. Recommendation

The prone position is prohibited in Islamic instructions as the prophit stated:

Ya'ish ibn Tikhfa al-Ghifari said,"My father said."Once while I was lying on my stomach in the mosque,a man moved me with his foot and said" This position which Allah hates."He said "I looked up and it was the Messenger of Allah, may Allah bless him and grant him peace (PBUH)."

The instruction of our Prophet Mohamed (PBUH) informed us that "the prone (front) position is prohibited. and the right side position is advised to be the side of sleeping.

Comment

It is clear that (SIDS) in infants and (SUNDS) in adults share several features that suggest they constitute a distinct one syndrome , taking into consideration the age .This also encourage us to think about one definition only of :(sleeping position death syndrome By all the results of this study, we feel that now it is possible for distinguishing SUNDS, NM. And near- miss SUNDS, ALTE, SIDS, by having the already mentioned criteria and characteristics.

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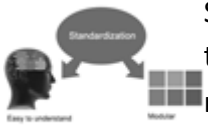

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Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

5. Ask your Guides: If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

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9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

11. Revise what you wrote: When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

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15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

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Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

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The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

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- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
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This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

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- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
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- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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ISSN 9755896